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**IDENTIFICATION OF OPTIMAL INTERNATIONAL MARKET STRATEGIES:
COMPARATIVE CASE STUDY OF FINNISH HEALTH TECH STARTUPS**

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<p>Technological advancements and internationalisation has changed the dynamics of economic growth. As countries move towards entrepreneurial growth, the traditional large-scale organizations have become obsolete. Instead small and medium enterprises have contributed to the economy through job creation and increasing of exports. Technological start-ups with their lean structure and high growth have contributed to the economy manifold. In this regard Finland is known to have one of the leading start-up eco systems globally. Health tech start-ups in Finland have contributed to economic growth through their exports and provided the country with an innovative technological base. They have further provided growth through job creation and foreign market penetration.</p> <p>This research is conducted to study the factors that enable a health tech start-up to internationalise and contribute to economic growth in Finland. Entrepreneurial orientation, market driven management, networking and culture are the internal and external factors associated with international entrepreneurship and studied in this research. Data was collected through semi structured interviews from three health tech start-ups in Finland, that have created an international customer base within the first six years of their operations. Results of the study show that entrepreneurial orientation when treated as a collective of its three constructs, innovativeness, risk taking and pro-activeness is an internal factor that enables a start-up to develop competitive advantage and seek international opportunities. Whereas market driven management was found essential for the start-ups to maintain that competitive advantage in international markets. Networking was found to have a significant impact on retention of international opportunities while culture did not seem to drive the international efforts of health tech start-ups.</p>			
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1 INTRODUCTION

In developed countries, entrepreneurial development in the sense of small and medium-sized enterprises has been studied in detail. A decade of research conducted on the subject highlights the role of entrepreneurial growth in job creation, however there is significant ambiguity regarding the mode of growth and policies that are effective for small and medium enterprises (Davidsson, Achtenhagen, & Naldi, 2010). Overall there is a shift in entrepreneurial perspectives from revenue generating entrepreneurship towards innovation driven entrepreneurship. Innovation driven entrepreneurship creates a competitive advantage in the market through new technology, business model or a groundbreaking idea (Aulet, 2013). In the case of Innovation driven entrepreneurship, the entrepreneur acts as a commercializing agent to turn an invention into a business strategy that can be utilized to target global markets as well as local markets.

This incremental growth in the field of innovation led entrepreneurship has emphasized on policies related to start-ups and SMEs (small and medium-sized enterprises). It resulted in an overall change of economic policies from managed economy towards entrepreneurial economy (Audresch & Thurik, 2010). Where managed economy concentrated on resolving the current economic issue by maximizing productivity and minimizing negative social and commercial externalities, entrepreneurial economy developed knowledge sharing through creativity and entrepreneurial activity. Advancement in technology and internationalization are the main reason behind this change in economic approaches towards business growth (Audresch & Thurik, 2010).

This advancement in technology has led to establishment of small and medium enterprises. Latest technical innovation makes old technology obsolete and therefore shifts the competitive advantage from old large firms to smaller new firms (Brock & Evan, 1989). This competitive advantage and technological advancements create new local markets and abroad, leading to a change in the entrepreneurial landscape. Eventually developing new employment opportunities and economic revenues which are essential for economic growth.

Another factor that simultaneously influences the entrepreneurial economy growth is internationalization. New technological advancement requires to maintain the gained competitive advantage in global markets. This competitive advantage can only be attained through exploration of new knowledge bases and expanding of the start-up enterprise (Audresch & Thurik, 2010). This research examines the factors that enables technical start-ups to become more successful internationally in order to sustain market competitive advantage specifically in the context of organizational strategies.

Economic prosperity in an entrepreneurial economy is measured through the creation of new employment opportunities, innovation and establishment of new firms. This creation of new firms is deemed particularly important for export-oriented countries such as Finland by academic scholars (Sipola, 2015). They advocate that since the domestic market size is not large, growth is sought through the process of internationalization.

Economic growth through the process of internationalisation has attracted the investment of governments to encourage the entrepreneurial activities of developed countries (Audresch & Thurik, 2010). This has further attracted a lot of research on the topics of international entrepreneurship and its determinants of growth, which majorly revolve around entrepreneurship and strategy to internationalise (Knight, 2001), constraints effecting internationalisation of firms (Ellis, 2011) and country specific entrepreneurial perspectives (Luostarinen & Gabrielson, 2004). All these research areas are greatly contributing to the growth literature of entrepreneurial research. However, as growth is a fundamental economic consequence of internationalisation. There is no specific research regarding why some firms internationalise more successfully than other new firms (Davidsson, Achtenhagen, & Naldi, 2010).

1.1 Start-up Eco system in Finland

In the context of Finland, a huge economic gap was generated through the fall of tech giant Nokia, providing an incentive for small and medium enterprises to fill that gap through technological advancements (Wallin, Still, & Henttonen, 2016). This gap was partly filled through the funding of Nokia's bridge funding program that encouraged

its past employees to seek entrepreneurial ambitions and set up technological start-ups (Bosworth, 2014). Apart from this Finland is known for its high technology advancements and solutions and has received top ranking in innovation technology (Schwab & Sala-i-Martin, 2014). This has also led to public sector investing in the start-up eco system of the country with the ambition that it can drive economic growth (Wallin, Still, & Henttonen, 2016)

In the first half of 2019, Finnish start-up eco system generated 60% of its funding from international investors (Finnish Venture Capital Association, 2019). This international interest in funding enables the Finnish start-up eco system to grow overall by creating a network of foreign investors and bringing international direct investments business to Finland. From this it can be summarized that the Finnish start-up eco system is thriving and has further potential for growth internationally. Every year approximately 4000 start-ups are founded in Finland, out of which 300-400 are growth start-ups. Growth start-ups are expected to grow substantially in three to four years from their inception (Business Finland, 2019)

1.2 Health-Tech Start-ups in Finland

Among the start-up eco system, health tech is a rapidly growing domain, which has attracted approximately 20% of foreign venture capital investment last year in 2019 (Venture Capital Activity, 2019). The health tech sector of Finland utilizes various innovative technologies such as internet of things (IoT), artificial intelligence (AI) and robotics. This innovation in health technology has led the health high tech to become one of the highest exports of Finland. In 2018, the exports from health tech sector exceeded by 2.3 billion euros. These exports further grew by 3.4% in 2019 (Health Tech Finland, 2019).

Figure 1 represents the health technology product trade in Finland. **Figure 1** also shows the timeline and revenue generate from health tech exports during 2005 to 2019.

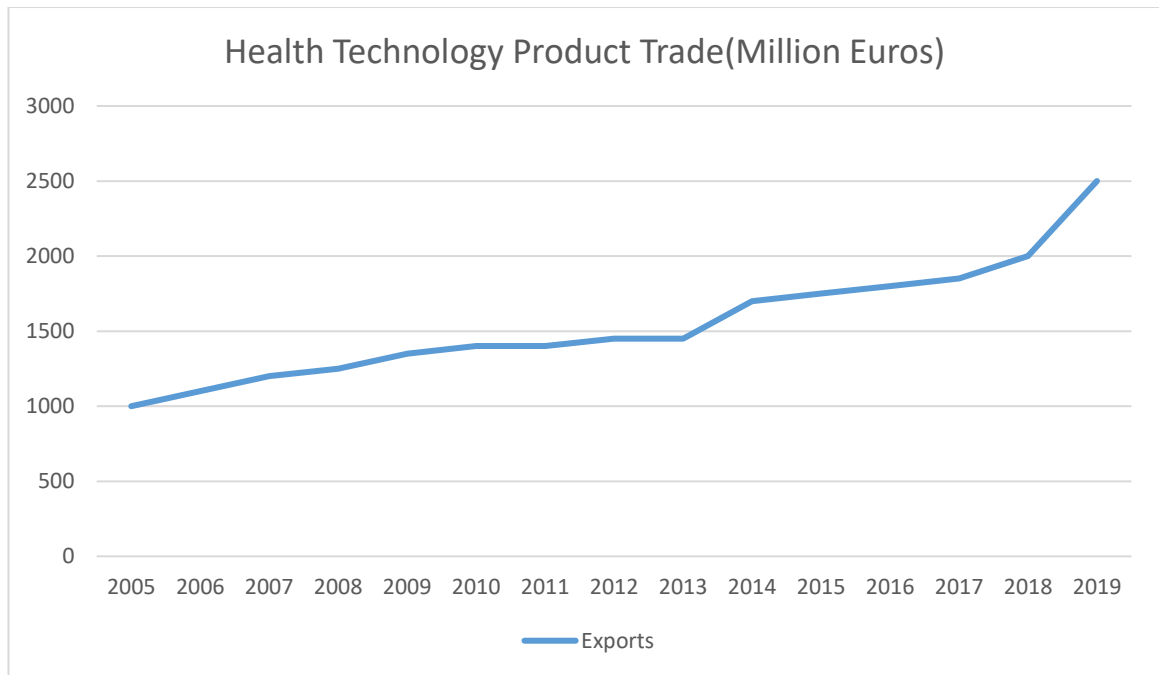


Figure 1. Health Technology Product Trade (Source: Adapted from Health-tech Finland)

The health tech sector currently employs over 13,000 people in Finland and has attained a trade surplus of 12 billion euros in the last twenty years (Health Tech Finland, 2019). These numbers prove that the health tech sector of Finland is growing each year and is aligned with the global health tech growth rate. The global health tech growth rate is expected to grow by 2024 to approximately 600 billion euros (Rantanen, 2020). The biggest export market for Finnish health tech is in United States with 41% of the total exports and Europe is the second largest with 34% of total exports (Health Tech Finland, 2019).

In addition to innovation and technical development of health tech, these numbers also showcase the entrepreneurial side of health tech industry in Finland. These favourable statistics have gained the attention of researchers from international business and entrepreneurship to understand the dynamics of health tech sector growth in Finland. So far the research in the domain of high tech health start-ups in Finland revolves around either a specific market entry into a foreign country (Rantanen, 2020). Accelerators and their mentoring of start-up teams (Palo-oja, 2019), lean methods and internationalisation entry barriers for start-ups (Haho, 2018) and entrepreneurial growth ambitions in Finnish high tech start-ups (Wallin, Still, &

Henttonen, 2016). There is however very few research on the organizational strategies used by health high tech start-ups to internationalise.

1.3 Scope and Significance of Research

The purpose of this research is to study in detail the organizational strategies utilized by high tech health startups in Finland to venture into international markets. A critical analysis of these strategies will underline the factors that positively impact the startup and the factors that do not impact in order to internationalize. Finland being an individualistic nation has high rate of innovation driven entrepreneurship, however it struggles in global markets in comparison to other Nordic countries (Erkko, 2009). Finland also has an upcoming and booming start-up eco system that puts it on the European map for potential investments (Finnish Venture Capital Association, 2019). The health tech sector of Finland in particular, develops and utilizes innovative technology to generate business internationally. This internationalization is contributing to the Finnish economy in the form of exports (Health Tech Finland, 2019). Therefore, this research contributes in understanding the process of internationalization of health high tech startups.

(Tiessen, 1997) in their research concluded that in the entrepreneurial lifecycle activity can be divided into two stages, the innovation stage and the resource allocation and development of external networks stage. From this research we can conclude that Finland is doing exceptionally well in terms of innovation and technology, however there is a potential gap in understanding its second stage entrepreneurial strategies for internationalization. This is a current and emerging problem in entrepreneurial research, which can be useful for health tech startups. For the purpose of this research, tech start-ups have been chosen as various highly successful technical start-ups have succeeded in Finland (Luostarinen & Gabrielson, 2004). Furthermore, health tech start-ups have been chosen as their contribution to the Finnish health tech economy is impactful (Health Tech Finland, 2019).

This research can provide a basis for developing market strategies related to internationalization of startups. This research would benefit venture capitalist and

entrepreneurs behind health tech startups in Finland by focusing on the experience and networking abilities of the startup.

1.4 Research Questions

The study is focused on highlighting which strategies can be adopted by high tech health startups to internationalize successfully. Based on the identified research gap the following research questions have been formulated:

Q: How can Finnish high-tech health startups internationalize successfully?

- a) How does entrepreneurial orientation and market driven management impact internationalization of high-tech health start-ups?
- b) What networking and culture strategies effect internationalization of high-tech health start-ups?

1.5 Key Definitions

In order to clarify the literature review and theoretical framework of this study the following definitions are derived from existing literature to explain the main components of this research.

1.5.1 High Tech Start-ups

In this study the term high tech startups refer to organizations that intend to compete in international markets and therefore are closer to the definition of international new ventures in high-tech industry. Many scholars have used the terms synonymously in research regarding international entrepreneurship (Kuivalainen, Sundqvist, & Saarenko, 2012) (Jolly, Alahunhta, & Jeannet, 1992)

Moreover high tech startups diverge from the criteria of size and age of the firm and instead include the firm's intention to globalize (Oviatt & McDougall, 1994) (Zahra & George, 2004). These firms either intend to globalize from the beginning or early on after inception, the time line which defines firms as new ventures is presented by (Oviatt & McDougall, 1997). They suggest that firms that intend to globalize in first six years after their inception can be termed as international new ventures. Thus, we

can state that this research includes high tech start-ups that intend to establish a global presence within six years of their operations.

1.5.2 Internationalization

Academic research has tried to define internationalization through various business, social and cultural aspects, however (Scholte, 2008) defines internationalization as the reduction of barriers to a more collective social world where individuals become physically, economically, culturally and psychologically involved with each other.

Although social scientists have defined various aspects of internationalization, international economists have quantified it through the level of integration between countries (Streeten, 1996) . This study aims to assess the factors that help high technology startups to internationalize successfully. As high tech startups are based on innovation and technology, the internationalization used in this study is closer to the definition of globalization theorized in (Archhibugi & Iammarino, 1999) research. They articulate internationalization in three categories,

- i. international exploitation
- ii. global generation
- iii. global collaboration of innovation.

The first category is most aligned with the agenda of this research. It includes the international exploitation of nationally produced innovation. In case of this research study, internationalization refers to the export of innovative products and customer generation in international markets by high tech health start-ups.

1.6 Structure of the study

The study will be focused on analysing organizational and market strategies that health high tech start-ups use to internationalise. These strategies could be internal competencies as well as external competencies developed by the high tech health start-ups. The study will be structured in a way as showcased in **Figure 2**. The chapter 1 introduces the reader to main subjects included in this research, along with the research questions and objectives of this research. Chapter 2 includes review of existing

literature and development of theoretical framework to conduct analysis. This chapter explains the development of international entrepreneurship as a research field and contribution of start-ups in this field.

Chapter 3 includes the research methodology used in the research. Since it is a qualitative research, multiple case method study is used in this study. The multiple case study method uses semi structured interviews with three case companies to understand the answers to research questions. Data collection techniques and methodologies will be included in this chapter. Chapter 4 includes the empirical analysis of data using multiple case study approach and the within case analysis. Interviews of the three case companies will be quoted here in context to the research objectives. Chapter 4 also include the discussion and cross case comparative analysis of the data gathered in this research. This study is concluded in Chapter 5, which provides a summary of the analysis and finding of this research. Along with some limitations and future recommendations for research.

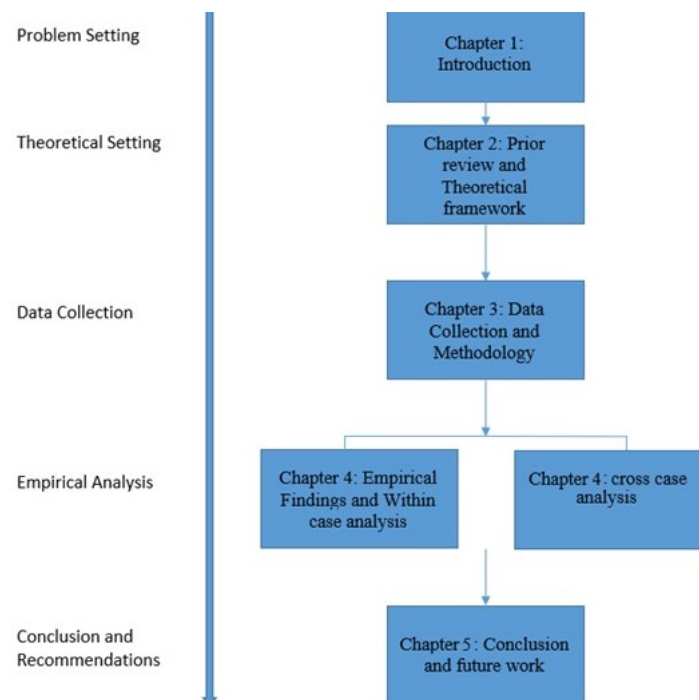


Figure 2. Structure of the Study

2 LITERATURE REVIEW

This chapter presents a Literature Review of already existing research on high tech start-ups and their internationalization strategies, factors that influence these strategies and the role of networking teams and marketing. The review presented is secondary literature and does not present an original idea or research. The purpose of this literature review is to develop a theoretical framework to conduct this research.

2.1 International Entrepreneurship

2.1.1 Defining International Entrepreneurship

The concept of international entrepreneurship dates back to 1980's and was identified with the recognition of technological advancements and cultural awareness which enabled new ventures to expand towards international markets (Morrow, 1988). One of the earliest definitions presented by (Oviatt & McDougall, 1997) defines international entrepreneurship comprising of novel and innovative activities by a firm that crosses national boundaries and creates growth and value in business. Later they revised this definition to identify four major traits identifying international entrepreneurship as realizing, assessing, determining and developing opportunity broad (Oviatt & McDougall, 2005)

This streamlining of the definition provided academic scholars with clear insights on the scope of international entrepreneurship. Realizing refers to the identification of opportunity in foreign markets, assessing refers to the probability of success in terms of business potential, determining refers to creating new business ventures and developing refers to venturing into foreign market territory.

Some scholars (Crick, 2009) (Zahra & George, 2004) have based international entrepreneurship on four major concepts namely:

- i) International new ventures
- ii) Born Global
- iii) Rapid internationalization
- iv) General models of international entrepreneurship

Categorization of these four fundamental concepts enables scholars and academics to define the boundaries of international entrepreneurship. According to (Crick, 2009) Global firms can be defined as firms having operations in at least three regions of the world, whereas international new ventures can be defined as ventures that aim to rapidly internationalize in order to capitalize an opportunity but not certainly having a global presence.

In **Figure 3** (Wach K. , 2014) identifies three major type of firms existing in the scope of international entrepreneurship based on the criteria of rapid vs slow internationalization and domestic vs international market orientation.

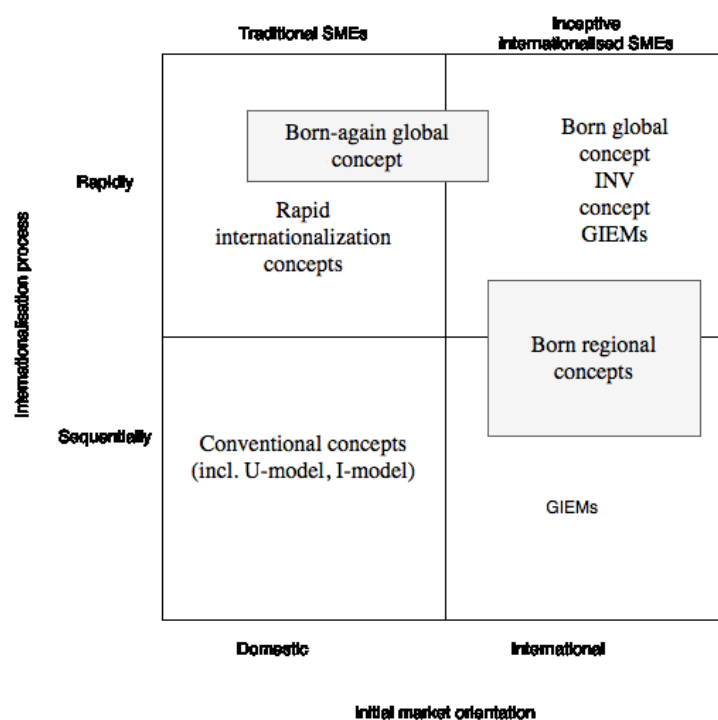


Figure 3 Basic typology of International Entrepreneurship Concepts source: (Wach K. , 2014a)

International Entrepreneurship explores the role of the entrepreneur as a key concept in the process of internationalization of the firm as well as the external environmental factors and the entrepreneurial process (Wach K. , 2014). The grey highlighted area in the figure above showcases the domain of international entrepreneurship.

Among the type of firms included in international entrepreneurial research this study focuses on the international new ventures due to their relevance in the high tech industry.

2.1.2 Research in International Entrepreneurship

Research in the domain of International Entrepreneurship started in the 1980's with the categorization of the term "International Entrepreneurship" in a doctoral thesis by Khon at Harvard Business School. Although the term was coined in the 80's, it gained momentum only in the first decade of the 21st century and since then has been developing intensively (Wach K. , 2014)

The development of research on international entrepreneurship can be traced back to the stages model in the 1970's which later became the basis of Uppsala model by Johanson and Vahlne (1977). It further developed with the resource-based view, which stressed on developing competitive resources that would help a firm operate in international markets. Figure above shows the development of research in the field of international entrepreneurship. The networking approach stressed on developing horizontal and vertical networks for firms to be successful internationally. This gave rise to the business strategy approach, where the main focus was on decision making of a firm. Eventually leading to the research in international entrepreneurship. The field of international entrepreneurship explicitly transitions the focus from the business and resources to the entrepreneur itself in the internationalization process (Wach & Wehrmann, 2014)

From this it can be concluded that the field of international entrepreneurship is not only influenced by business domains but also by the fields of sociology, political science, geography, economic development and psychology (McDougall , Jones, & Serapio, 2014) Therefore it is imperative to take into consideration the Human Factor, which is critical to understand while conducting research on international entrepreneurship domains (Wach & Wehrmann, 2014)

Initial research on international entrepreneurship comprised of study based on two fields international business and entrepreneurship (Oviatt & McDougall, 2005). (Zucchella & Scabini, 2007) added a third domain of strategic management into the research field of international entrepreneurship. Although strategic management was already present separately in the two domains of international entrepreneurship as

strategic entrepreneurship and international strategy. This addition of the third component provided a holistic view of strategy, business and entrepreneurship. Figure 4 below highlights the three domains of international entrepreneurship

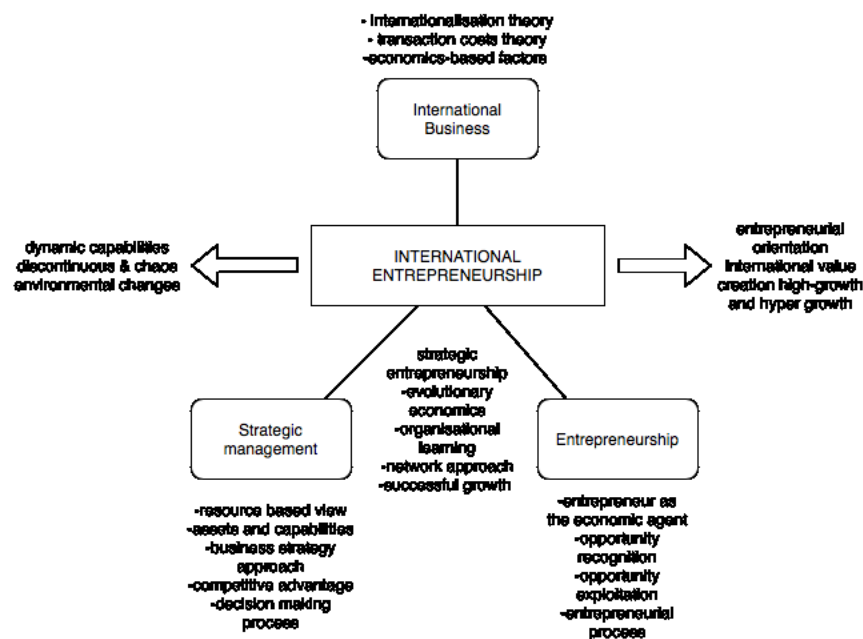


Figure 4 International Entrepreneurship and its three domains Source: adapted and extended from (Zucchella & Scabini, 2007)

The addition of this third field to the research of international entrepreneurship provided a different perspective to strategy. Rather than considering strategy as the beginning process for internationalization; it considered strategy as an evolutionary process which developed alongside the internationalization process (Garret & Covin, 2007). Strategy here was serving only as instructions and not the core driving force of the process.

Keeping this in mind, international entrepreneurship can be regarded as one of the main research themes to study the internationalization of a firm. Regarding it as a separate theme of research contributed significantly to the domain of international business. Particularly due to its emphasis on small and medium enterprises and their internationalization process (Wach & Wehrmann, 2014)

Furthermore, among these research themes the broader categorization of international entrepreneurial research can be classified into two streams (Wach K. , 2014)

- i. The creative process of recognizing and exploiting international markets, placing entrepreneur at the center of the process. This stream uses the traditional theories and practicalities of entrepreneurship and includes excellence in creativity, innovation and entrepreneurial activity.
- ii. The comparative research and international studies of entrepreneurship, placing the process of entrepreneurship as the focal point of this research. Traditional international comparative studies are utilized in this research domain for e.g Global Entrepreneurship Monitor (GEM)

(Coviello et al, 2011, Wach, 2012) identified that international entrepreneurship revolves around three core problems, the entrepreneur, the external environment and the entrepreneurial process. (Jones, Coviello, & Tang, 2011) further identified three types of research, entrepreneurial internationalization, that primarily focuses on venture type, networking and social capital, internationalization etc. The second kind is cross nation comparison of international entrepreneurship and the third is cross country national comparison of international entrepreneurship. This research falls under the type A research and focuses on venture types their networks and social capital.

The literature review discussed above of the evolution of research in international entrepreneurship provides a clear direction of placing this research in venture type of international entrepreneurial research with a close analysis of networks and social capital development. Although this is one of the main streams of research for international entrepreneurship this study provides an in-depth analysis of cultural context of these venture types in international entrepreneurial setting. The literature above also signifies the importance of conducting international entrepreneurship research based on the entrepreneurial theories and utilizing the entrepreneurial and innovation processes.

2.2 International New Ventures

Research literature defines international new ventures as firms that intend to internationalize rapidly after inception. These business organizations mostly overlook the development of firm specific advantages , that result from R&D activities of a firm

due to a time constraint (Verbeke & Zargarzadeh, 2014). Instead international new ventures gain their competitive advantage through resources that can be obtained in international markets to sustain them and the intention to sell their services or product in multiple regions upon completion. A unique feature of international new ventures is that they operate on a proactive international strategy from beginning and develop strategic alliances for resources in international markets (Oviatt & McDougall, 1994).

In order to compete in foreign markets, international new ventures move technological innovations across borders along with expert organizational strategies. This creates new job opportunities and contribute to economic and technological progress of the foreign country (Mudambi & Zahra, 2006). For this purpose, researchers have been trying to identify factors that enable international new ventures to become sustainable in foreign markets. Various researches advocate that international new ventures primarily focus on business strategies that help them establish themselves in foreign markets (Sheperd & Douglas, 2000).

A research was conducted by (Mudambi & Zahra, 2006) on industry characteristics and firm characteristics that contribute to the success of an international new venture. The results indicate that among industry characteristics, high growth industries are favourable for sustainability of international new ventures. Whereas in firm characteristics, high technological competency and high international experience result in success of the international new venture.

Among the firm and industry characteristics of international new ventures scholars have emphasized on prior experience of managers and the firms internal adapting flexibility as contributing factors to their internationalization efforts. These two factors reduce uncertainty and hidden costs of international business opportunities for these firms. Resulting in better success in international markets. (Busenitz & Barney, 1997) (Harveston, Kedia, & Davis, 2000)

Research has also shown that cultural similarity between the home and international market also plays a crucial role in the international success of international new ventures as they are able to predict market changes and competitors more accurately. (Fan & Phan, 2007)

An international new venture can be described as entrepreneurial, innovative, risk-taking and proactive in spirit (Covin & Slevin, 1989). International new ventures are also known for their rapid speed of internationalising strategies and factors that influence this rapid internationalisation. (Acedo & Jones, 2007) in their research studied international orientation of firms, innovativeness, proactivity and tolerance to ambiguity. Results from their research indicate that higher the international orientation of a firm higher would be their proactivity and lower perception of risk. They suggest that clear goals and strategies for internationalization on a firm level increase entrepreneurial behaviour.

An interesting reason for the high rate of growth of international new ventures could be the learning advantages of newness that a new venture might benefit from in their internationalisation process. Three constructs, structural, cognitive and positioning of the firm explained how the new firm has more flexibility in international markets. This is due to few interior constraints, better insights to knowledge and fewer domestic ties. Making the internationalisation decision of a firm much more successful (Zhou, Barnes, & Lu, 2010)

2.2.1 Types of Firms in International New Ventures:

International entrepreneurship research is a comparison of early and late internationalisation of firms and primarily focuses on determining factors of international new ventures (Baum, Schwens, & Kabst, 2011). The categorization of international new ventures has been presented by (Oviatt & McDougall, 1994) into four major types of international new ventures. These are:

- i. Geographically Focused Startup
- ii. Export Start up
- iii. Multinational Start up
- iv. Global Start up

Building on this classification of international new ventures (Baum, Schwens, & Kabst, 2011) identified determinants of each type of international new venture in order

to understand their internationalisation process. (Oviatt & McDougall, 1994) predicted that each determinant had a different impact on internationalisation and depended on the type of international new venture.

According to (Baum, Schwens, & Kabst, 2011) (Oviatt & McDougall, 1994), geographically focused start-ups operate on a larger scale but in selected markets and are therefore best determined by knowledge intensive products and differentiation in products and services. Multinational start-ups and Export start-ups gain success by identifying opportunities and harvesting them in international markets. Where global start-ups gain competitive advantage from a young age through the coordination of organizational activities. The internal activity of these start-ups results from a growth-oriented attitude of top management and team.

Among the international new ventures, this research constitutes the *global start-up* type of firms. The determinants of success in international market revolve around internal organizational factors of these start-ups. The major focus of this research is on organizational structures such as entrepreneurial orientation of the firm and market driven management, which represent growth ambitions of top management and their ability to implement them. As well as entrepreneurial and team capabilities, such as networking and cultural significance between teams.

2.3 International New Ventures and Entrepreneurship

The traditional internationalization models are no longer applicable to small and medium enterprises when we consider international entrepreneurship as a separate research domain. The small and medium enterprises operate in international markets without following the traditional decision making and systematic sequence of traditional models, therefore their growth and sustainability varies from traditional approaches. The approach of small and medium enterprises is built on utilizing business opportunities and existing contacts (Wach & Wehrmann, 2014)

In order to understand the theories that are better applicable to small and medium enterprises, many scholars have proposed alternate theories that explain internationalization in these enterprises. (Etemad, 2004) proposed a three layered

framework, comprising of the entrepreneurial layer, the enterprise layer and lastly the market layer. While each layer has entities with a different set of characteristics, the overall impact of these attributes is determined by that layer. The first focus of their research is on the entrepreneur, the second on the enterprise and third on the market rather than the industry.

Some scholars stress that a firm's culture and routines develop internal capabilities that lead to competitive advantage for that firm. A firm's knowledge that is allocated in its culture and processes ultimately results in higher performance and competitive advantage (Frishammar & Andersson, 2009)

Keeping in mind that long term strategies and traditional theories of international entrepreneurship are not applicable to international new ventures and small and medium enterprises, we focus on the factors that can influence international new ventures. One of these factors are dependent on considering market as a central construct towards internationalization. Namely (Frishammar & Andersson, 2009) proposed from their research findings that market orientation of the firm contributes significantly to its international endeavors while strategic orientations have little influence on a firms international performance. In their discussion they presented the argument that while market orientation focuses on existing customer needs, entrepreneurial orientation builds a potential customer base for the firm.

2.4 Optimal International Market Strategies Used by High Tech Startups

2.4.1 Entrepreneurial Orientation

Entrepreneurial orientation is the firm level commitment and capability to internationalize and globalize their business. In academic literature two corresponding concepts, entrepreneurial orientation and corporate entrepreneurship relate to international entrepreneurship on the firm level (Zur & Walega, 2015). Scholars further differentiated between entrepreneurial orientation as the firm's strategy and potential to operate in international markets and corporate entrepreneurship as the firms actual activities in foreign markets (Zahra S. , 1996) (Dess & Lumpkin, 2005). In the literature present on entrepreneurial orientation the scholars agree on one common perspective that entrepreneurial orientation is a firm level phenomenon.

In order to define entrepreneurial orientation (Miller, 1983) and (Covin & Slevin, 1989) presented entrepreneurial orientation in a firm as a three dimensional construct, based on behaviors such as proactive, innovative and risk taking. Furthermore in their research (Lumpkin & Dess, 1996) presented entrepreneurial orientation as a multidimensional phenomenon to include competitive aggressiveness and autonomy in the three dimensions already presented by (Miller, 1983) and (Covin & Slevin, 1989). However, most scholars utilized the three-dimensional concept of entrepreneurial orientation in their research developed by (Wach K. , 2015) . **Table 1** illustrates the three dimensions of entrepreneurial orientation.

Table 1. The construct of Entrepreneurial Orientation, adapted from (Wach K. , 2015)

No.	Basic Dimensions	Composite Qualities
Three-dimensional Construct of Entrepreneurial Orientation		
1	Pro-activeness	<ul style="list-style-type: none"> • Predicting future market trends • Identifying existing opportunities and future opportunities
2	Innovativeness	<ul style="list-style-type: none"> • Generation of new ideas • Creativity and product development • Inventive solutions to market problems
3	Risk Taking	<ul style="list-style-type: none"> • Financial risk in future projects • Taking decisions in ambiguous situations

(Wach K. , 2015) further stressed on the importance of cultivating strategic behavior theory for firms and their international markets. The ability of a firm to score high on entrepreneurial orientation enables them to deal with foreign market challenges and environmental parameters. He also stressed on the importance of conducting thorough market research before committing resources to international operations.

(Knight, 2001) links high entrepreneurial orientation to higher international performance by the firm. In his research he states that international entrepreneurial orientation results in motivating key strategic factors that lead to better organizational performance. Hence achieving the organization's goal for successful

internationalization. (Wach K. , 2015) further implores that the most important aspect of international entrepreneurship is the decision-making process by the firm. Scholars identify three aspects of the decision making process, scope, time, and scale (Kuivalainen, Sundqvist, & Saarenko, 2012) (Wach K. , 2014a) (Zahra & George, 2004)

(Frishammar & Andersson, 2009) in their research analysed the impact of three aspects, risk taking, innovativeness and pro-activeness on a firm's performance. Their research was conducted on Swedish small enterprises and results indicated that pro-activeness was the only determinant that held a positive relationship with international performance. However, majority of research conducted on entrepreneurial orientation has been quantitative and there is a need to conduct case study analysis to understand the impact of entrepreneurial orientation in detail.

(Avlonistis & Salavou, 2007) in their research of 149 manufacturing SME's use cluster data analysis technique to divide entrepreneurial orientation into two points, active entrepreneurs and inactive entrepreneurs. Their findings conclude that product innovativeness is comparatively high in active entrepreneurs and is influenced by risk taking and proactivity policies of the entrepreneurs. Then then in turn contribute to the international success of these companies.

2.4.2 Market Driven Management

International Entrepreneurship has shifted the leverage of a firm from goods to knowledge. Prior to globalization, production efficiency was achieved through monitoring quantity to cost ratio. However, after globalization, production efficiency is gained through time effective competitive edge in markets. The scholars (Zahra & George, 2004) (Brondoni, 2008) describe this change towards competitive advantage on the ability to innovate faster and deliver value addition in the global market. This is possible through market driven management strategies that provides a cost-efficient competitive advantage catering to market demand and surpassing competition (Brondoni, 2008).

In their article (Zahra & George, 2004) show top management can directly influence a firm's success and failure in international market. They list growth orientation and market environment scanning as two attributes that influence entrepreneurial efforts of the firm. Growth oriented management plays a significant role in deriving the strategic direction of the firm towards international entrepreneurship. Market environmental scanning enables a firm to gain knowledge regarding market competencies and competitors which makes the internationalization process of firm easier.

(Majocchi & Zucchella, 2008) also proposed that international entrepreneurship and Market Driven Management are complimentary to each other. Where Market Driven Management companies develop two capabilities, *market sensing* and *customer linking*, which are directly aligned with the goals of being proactive, innovative and collaborative of global entrepreneurship. Market sensing equips the firms to develop knowledge regarding customers, competitors and Customer Linking refers to cultivating relationships with these customers with the aim to exploit market trends and opportunities. Thus, market driven organizations possess a competitive advantage in anticipating and developing prospects in global markets.

In their article on market driven management for lean startups in the wearable's high-tech business (Dehghani, Abubakar, & Pashna, 2018) found innovation an essential competitive advantage. They also identified four aspects that can be core drivers for top management to internationalize successfully. These are market entry, product development, product attributes and commercialization. They conclude that market driven management helps startups to reach their globalization targets. (Zahra S. A., 2008) found the relationship between market driven management and firm performance to be positively interlinked in high tech industries. High tech firm managers implementing market driven strategies increased their market knowledge. This market knowledge enabled them to deliver innovative products and forecast market trends. Thus, summarizing market knowledge as a contributing factor to market driven management and firm performance.

An integral part of market driven management includes market capability development of the firm that incorporates customer relationships, distribution networks and market

research capabilities. In their research (Weerawardena & Cassb, 2004) concluded that higher the market capability of a firm the more sustainable is their competitive advantage. (Gnecchi, 2009) also suggested that in addition to market knowledge, customer knowledge was an imperative determinant of competitive advantage in foreign markets. This customer knowledge not only links customers but provides strategic alliances with partners. The focus on individual customer is further reaffirmed by (Ruokonen, 2008) in their article stating that customer knowledge outperforms market knowledge in determining international success. From these prior researches we can determine that market driven management directly impacts the international success of a company. Hence making it an important strategic tool to be studied in this research study.

2.4.3 Networking Strategies

An important aspect of international entrepreneurship is opportunity recognition, opportunities are exogenous in nature and result from imperfect markets (Eckhardt & Shane, 1996). Researchers have established that opportunities are recognized by individuals instead of firms. Therefore, networking ties play a crucial role in recognizing opportunities. In their research (Ellis, 2011) conclude that social ties instead of business networking ties of entrepreneurs lead them to recognizing better opportunities in the international markets. Social ties were defined as ties between people in this research. Furthermore, they discussed the quality of opportunities recognized through social ties to be beneficial for the firm in longer run.

(Zahra, Korri, & Yu, 2005) in their article reemphasize the importance of international entrepreneurship as a method where the entrepreneur's past experiences shape their perceptions of opportunity recognition. Academic scholars (Sala & Yalcin, 2015) highlight that prior managerial experience is a contributing factor towards internationalization decision making of firms. To conclude the recognition of an opportunity is based on certain internal factors such as entrepreneur's experience and external factors such as feedback from formal and informal networks. Similar results were derived by (Coviello & Munro, 1997) in their research which associated international success of software SMEs to generation of formal and informal networks. Furthermore results of a research carried out on 494 SMEs by (Lindstrand, Sharma, &

Eriksson, 2012) show customer networking as a significant instrument for international success and market knowledge.

Online networking was also found to have a positive impact on internationalization of UK SMEs (Hamill & Gregory, 1997). The research stressed on the vital role of internet on international trade and estimated reduction in a nations competitive position internationally without it. Another research by (Arenius, Sasi, & Gabrielsson, 2006) found that internet had a direct impact on rapid internationalization of Finnish SMEs especially due to efficient time difference management between two countries. Hence emphasizing the importance of internet for international success. Another research by (Ferro-Cortes, Skander, & Prefontaine, 2017) analyzed the role of trust in SMEs international success. Results from their research determine trust as a fundamental component of interpersonal and interorganizational networking.

2.4.4 Cultural Impact

Among the factors associated with success of technical start-up companies, marketing strategies, networks and founders and managerial experience have been analysed in detail by researchers (Laanti, Gabrielsson, & Gabrielsson, 2007). These factors directly impact the society's social behaviour and consumer patterns. In traditional cultural research theories related to entrepreneurship, individualistic culture is associated with successful entrepreneurial activities (Hofstede G. , Culture's consequences: Comparing values, behaviors, institutions, and organizations across nations, 2001).Therefore indirectly culture plays a vital role in entrepreneurial networking and establishing international market presence of a company.

This discussion has prompted further research on the categorization of these cultural factors and their impact on economic activity. In business research two cultures identified by (Hall, 1960) have a significant impact and are still prevalent. Hall distinguished five culturally different concepts; language of time, space, things, friendship and agreements. Based on these five cultural languages a nation's culture can be divided into high context culture or low context culture. The way an individual communicates, and the context of the message determines high context or low context. In high context cultures more emphasis is placed on body language, nonverbal

communication, such cultures are more collectivist and place a high value on interpersonal relationships. Low context cultures are more individualistic and place value on verbal communication in comparison to body language context of communication. These contexts in cultures are important to understand while communicating in international business setting.

Furthermore (Lewis, 1996) distinguishes overall three type of cultures, liner active, multi active and reactive ones. According to this categorization Scandinavians and Nordics fall under the liner active culture which focus on one single task at one time. Multi active cultures focus on multiple business tasks at one time and reactive one's communicated by taking turns with their business partners. The significance of understanding the cultural context of a country is amplified in business communication in international entrepreneurship. Research shows that these traits have a significant impact on the entrepreneurial landscape of a country. The relationship between cultural dimensions and entrepreneurship is discussed in the article by (Radziszewska, 2014). (Mooij & Hofstede, 2010) advocate the impact of a nations culture on their consumption patterns. The research by (Kacen & Lee, 2002) emphasizes on cultural significance on consumer patterns in a globalized market.

In order to understand the significance of culture on international entrepreneurship this research analyzed the top managements sensitivity to take culture into account while considering international opportunities. This research analyzes the impact of culture on consumer purchasing behavior in international markets. The study also takes into consideration this impact by high tech health startup in their international market strategy.

2.5 Theoretical Framework

Based on the review of prior academic literature regarding organizational strategies that effectively equip health tech startups to internationalize. In this research, four organizational strategies namely, entrepreneurial orientation, market driven management, networking and culture are studied. The **Figure 5** presents four optimal strategies in the form of theoretical frame of this research. High tech health startups are independent entities that are utilizing these four strategies in order succeed in international markets. Therefore, international market success is a dependent variable

in this research study. It is dependent on entrepreneurial orientation, market driven management, networking and cultural strategies of the high-tech health startup. Academic literature has associated the success of international new ventures namely startups with these four factors. This research aims to explore the impact of these four factors on international market success.

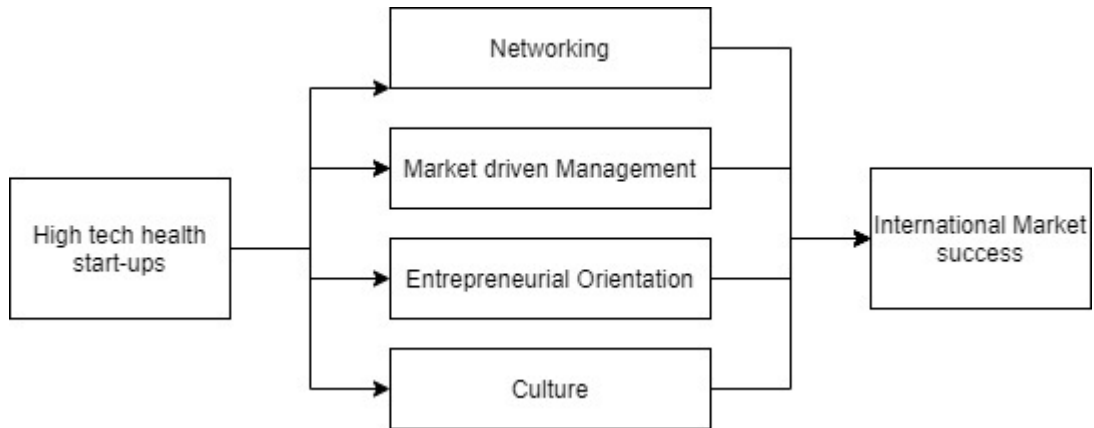


Figure 5.Theoretical Framework of Research

Firstly, entrepreneurial orientation has been studied in the context of its three dimensions, innovativeness, risk taking and pro-activeness. Second, market driven management has been studied through market sensing and customer linking for potential opportunities. Third, networking is analysed in the context of social and business networking for retention and exploration of opportunities. Finally, culture in this theoretical framework has been studied for its impact in driving international market strategies of the health tech start-ups.

3 RESEARCH METHODOLOGY

This thesis research is qualitative in nature. The methodology was selected after meticulous deliberation on the objective of this study to understand which internal organizational factors play a crucial role in international success of high-tech health startups in Finland. Qualitative research method is exploratory and provides a more complete view of the research problem (Eriksson & Kovalainen, 2004).

Qualitative research also provides depth to the analysis and extracts the meaning associated with the studied subject. Qualitative research methods are also suitable in studies that are focused on exploring the reasons behind any phenomenon (Miles & Huberman, 1984) (Ghauri, Gronhaug, & Kristiansund, 1995) (Stake, 2000). This is particularly adequate for this research method as it will help me interpret the results better.

In the domain of international entrepreneurship, qualitative research methodology has been utilized by many scholars to understand the internationalization process of Start-ups. Qualitative research focuses on obtaining in depth non numerical data for the purpose of explaining the process of decision making (Williams, 2007). This kind of research provides deeper levels of understanding that is not achieved through numerical analysis. Case study method is one of the ways to obtain qualitative data for research. Qualitative data provides richer context to the analysis (Miles & Huberman, 1984) This richer context provides researchers with enhanced opportunities to analyse the subject at hand (McGaughey, 2004). Qualitative data also provides researchers the chance to extend and reapply already existing literature theories (Knight, 2001).

In their research (Marschan-Piekkari & Welch, 2004) highlight four rationalizations for using qualitative research methods which also justify the use of qualitative research methods in this study. A qualitative research approach in this study, provides more exploratory and strategy determining analysis instead of a cause and effect relationship provided by an empirical study. Secondly, it allows the conceptualization of networking and entrepreneurial orientation on a holistic level and takes away any cultural bias during the research process. Thirdly this method provides the leverage to

choose the tool best suited required to collect data from the subjects. Finally, this research approach encourages to take into consideration the underlying factors apart from the obvious behaviors determined during data collection (Marschan-Piekkari & Welch, 2004)

3.1.1 Case Study Research

The five tools for qualitative analysis are; survey, archival analysis, history, experiment and case study. The selection of which method is more appropriate to conduct research depends on the research questions, the type of required data and its current relevance (Yin, 2003) .

The research questions in this case study are centered around organizational factors that influence internationalization of Finnish high-tech health startups, making it a what question and explaining the reasons behind this, making it a how question. (Yin, 2003) in this situation proposed three tools of choice for research, these were experiment, history and case study. Since my research is applicable in current times and data cannot be extracted in an artificial laboratory situation, it rules out the possibility to conduct an experiment or utilize history approach. Therefore, among the types of research tools used in qualitative analysis, the best suited method to collect data for this research is the case study approach.

This research is based on collecting data through in-depth interviews and compiling a case. Case study approach is useful in gathering preliminary data with the purpose of developing a more structured tool for further investigation (Yin, 2003). This research approach is useful in answering questions such as what and how and is designed to be more exploratory and descriptive in nature.

Other scholars have also used the case study approach in their research on international entrepreneurship. (Laanti, Gabrielsson, & Gabrielsson, 2007) used the case study approach to analyze network and capabilities of Finnish born global companies. Some academics advocate that a case study approach is particularly appropriate while conducting research on a new topic area (Knight, 2001). The reason for this is the lack

of prior knowledge in the research area that leads to gathering in-depth knowledge through a case study approach (Stake, 2000).

3.1.2 Multiple Case Study Approach

In a case study approach, there are two types of parameters for research; intensive and extensive case study approach. An intensive case study approach, that focuses on an individual or firm and conducts a detailed research on a unique phenomenon. In an intrinsic case study, the main interest is in the case itself rather than the phenomena. The second is the extensive case study approach, that includes study of various subjects i.e individuals or firms that allows a cross case comparison of general concepts. These concepts can be later applied to other research context as well, the aim to conduct an extensive case study is to explore the cause of certain issues, either testing an existing theory or filling a research gap in theory (Eriksson & Kovalainen, 2004).

The intensive case study approach is also termed as intrinsic case study by some researchers due to it's focus on abstract constructs without a prelude of theorizing (Stake, 2000). In an extensive case study, the main focus is to study the phenomenon itself rather than particular cases. The different cases are compared to analyze and determine the cause of the phenomenon. This type of case study is also termed as instrumental case study by (Stake, 2000) as it extends beyond the case itself to study a phenomenon that is applicable to other research.

Furthermore; case study analysis can be either single or multiple. The point of difference between the two is determined by the objective of the research (Yin, 2003). A single case study approach is chosen when the researcher wants to conduct a longitudinal study or study uniqueness of an issue through a single individual/ firm. In other terms a single case study research most often adopts the use of intensive case study approach. (Eriksson & Kovalainen, 2004)

Where a multiple case study design focuses on understanding the research problem through observing various individual's or subjects. The selection of these cases is not done through statistical sampling but through theoretical aspects. The cases are chosen

either due to their similarity or are distinctly different, which would allow interesting comparisons. In both the cases the objective is to validate an existing theory or compare and produce a new theory (Eriksson & Kovalainen, 2004).

Based on the above, this study falls under extensive multiple case study design approach as its main objective is to understand the optimal strategies for international market success of high tech Finnish startups. Therefore, it uses multiple case studies to compare an already existing theory of entrepreneurial orientation, networking, marketing and cultural significance on international entrepreneurship. The focus is not on one case but to study the phenomenon. Firstly, it enables me as a researcher to compare and constitute common factors that lead to international market success of Finnish high tech startups. Secondly this approach allows generalization and addition to existing academic theory, which can be later applied to further research on internationalization process of Finnish High Tech startups. Thirdly a multiple case study approach adds credibility to the research and removes any research bias present in studying the phenomenon.

3.1.3 Selection of Case Companies

As this research is a extensive multiple case study research, the case companies chosen for this study fall under the criteria developed by (Eriksson & Kovalainen, 2004) in their research paper. An extensive multiple case study research is exploratory in essence and comprises of more than one individual cases that can investigate a cause and effect relationship (Yin, 2003).

The selection of case companies was done based on replication logic rather than a statistical sampling (Eriksson & Kovalainen, 2004). Replication logic by (Yin, 2003) suggests to select cases that either produce similar results or provide completely different results but for obvious reasons. (Lee, 1989) on the other hand, suggests the replication of previously researched theories on a new set of subjects, under new circumstances that would ultimately alter the results but provide comparisons. These results can pave path for future research and deductions.

Therefore, for the purpose of conducting a relevant and significant research, three

criteria were established for selection of cases in this study. First; all case companies were operating in similar markets, in this study that was High Tech Health Startups in Finland. This provided all the case companies with similar market circumstances. Secondly, all the selected case companies had created an international presence within the first six years of their operations. This was based on the criteria by (Zahra S. , 1996) and (Oviatt & McDougall, 1994) developed for their research on international new ventures. Thirdly, the case companies all have different approaches to international entrepreneurship, thus providing a different circumstance to evaluate the effect and conduct a cross case analysis.

The number of cases in an extensive multiple case study approach is usually influenced by the research objectives and purpose of the study. There is no minimum limit required on the number of cases in this research approach as it does not influence the results (Eriksson & Kovalainen, 2004). According to (Yin, 2003), it is advised to do two or more cases as it leads to a better comparative and analytical study. More cases also increase the chance of external generalizability.

In view of the above mentioned and my main research objective to study the influence of internal organizational and team factors on international entrepreneurship in high tech health start-ups. I also kept in mind the limited resource availability of time and single researcher in selecting the number of cases. After considering the total number of High Tech Health Start-ups in Finland that fit the selection criteria, three case companies that fit the selection criteria were included in this study.

Finland has been chosen as a market to study due to it being a forerunner in technology based start-ups , and it being a small and open economy (Laanti, Gabrielsson, & Gabrielsson, 2007). Thus, this study includes three high tech health start-up companies that have internationalise or intend to create an international presence during their initial six years of operations. The multiple case study method chosen is holistic in nature and treats the cases as one unit of analysis on the broader level.

3.2 Data Collection

The data collection in qualitative research can be done in six ways, based on the research question (Yin, 2003). These six ways are; company documentation, direct

observations, company archives, interviews, participant observation and physical artifacts. However documentation and archives can present a biased view when considered on their own and need to be combined with the researchers personal observation in order to be valid for study (Yin, 2003). However, interview remain the most utilized tool for data collection in qualitative research (Eriksson & Kovalainen, 2004). This is due to the fact that interviews provide the researcher with in depth knowledge that can be analyzed for the study to generate concrete results (Holstien & Gubrium, 2004).

In order to collect relevant information and data for analysis of the research questions, appropriate health tech startups were identified that fit the selection criteria through online Finnish database. Online research and personal networks were used to identify a total of fifty health tech startups. LinkedIn was used to reach out to potential interviewees. In total fifty startups were emailed regarding the research objectives and scope. Out of the fifty, only five responded to take part in this research study. Out of the five, one company was only available for a telephonic interview; which I had to decline in order to preserve the reliability of the study. Another company had a rescheduling problem and could not provide the time for an interview. In the end three companies were interviewed and selected in this research.

3.2.1 Semi Structured Interviews

Data was collected through primary sources of conducting semi structured interviews and some secondary sources, such as the company's websites, LinkedIn profiles of the interviewees. In qualitative research interviews are usually conducted face to face and with a predetermined theme or direction of questions. The interview in this type of research serves as a material generating channel to produce data for analysis of the research subject (Eriksson & Kovalainen, 2004).

The interview studies in qualitative research are categorized by researchers as three types, positivist, emotionalist and constructionist. The positivist approach focuses on derivation of facts and on understanding the what questions of research (Stake, 2000). The positivist approach is also known as the naturalist or realist approach (Eriksson & Kovalainen, 2004).

The emotionalist approach of interviews is focused on studying the people's reaction and perception towards a phenomenon. It is also known as a subjectivist approach and asks the "what" questions to understand people's viewpoints, conceptions and emotions. The constructionist interview approach focuses on understanding "how" some phenomenon took place. This data is derived through the interaction between the interviewee and interviewer (Eriksson & Kovalainen, 2004). Scholars advocate to use the combination of two approaches for the "what" and "how" questions in order to get the best research work (Holstien & Gubrium, 2004). Taking this into consideration, this research study utilizes the positivist and constructionist approach to conduct semi structured interviews.

3.2.2 Interviews with Case Companies

Qualitative interviews can be structured or unstructured in nature, this is determined by the type of research questions and the research approach. In a constructionist and positivist research approach, semi structured interviews are best applicable to answer the "what" and "how" questions (Eriksson & Kovalainen, 2004). They provide the researcher with some guidelines and themes to steer the conversation towards the research topic as well as some scope to explore possible outcomes. Data for this research study was acquired using semi structured interview questions covering the theme of organizational factors that influenced international entrepreneurship.

The interviews for this research were conducted during the period of April 2020, considering the work schedule of the interviewees. As the objective of this study is to understand how organizational factors such as entrepreneurial orientation, networking and culture plays a role in the internationalization efforts of startups; an interview with the top management was necessary to gather valid information. Therefore, two CEO's and one marketing director of the health tech startups was interviewed. The interviews were conducted on Microsoft teams meeting and lasted for around forty to sixty minutes. These interviews were audio recorded with permission, for the purpose of being used for data analysis later by the researcher. Furthermore, the case companies and interviewees name were kept confidential to ensure confidentiality. The case

companies would be referred to as Start-Up A, Start- Up B and Start-Up C in this research so forth. **Table 2** summarizes the interview logistics in this research.

Table 2. Summary of interview logistics

	Title of Interviewee	Length of Interview	Interview Date
Company A	CEO	40:36	16 April,2020
Company B	CEO	44:55	21 April,2020
Company C	Marketing Director	55:30	22 April,2020

Following up each interview, as a researcher, I wrote a one-page reflection of the interview in order to preserve my initial take away from the interview regarding the research questions. Later after listening to the recording of the interview, the data was transcribed to be analyzed without the use of any software. These transcripts provided ground to sort data according to the research themes.

The interviews were conducted according to four predefined themes, the first theme was entrepreneurship. The interviewers were first asked to share their opinion on startups and entrepreneurship, followed by their own education and experience in international entrepreneurship. The second theme was entrepreneurial orientation, in which their company's strategy on risk taking, pro-activeness, innovation, anonymity and competitive aggressiveness was gauged through open ended questions. The third theme was regarding market orientation, in which their companies' perspective on customer retention, competitors and strategies to deal with competition in foreign markets was discussed. The last theme was regarding networking and culture, in which the companies approach to networking and discovering opportunities was discussed. This theme also included questions regarding how the company considered culture while taking decisions regarding an international move. The Venn diagram in **Figure 6** below explains the themes are their over lapping relationship with each other.

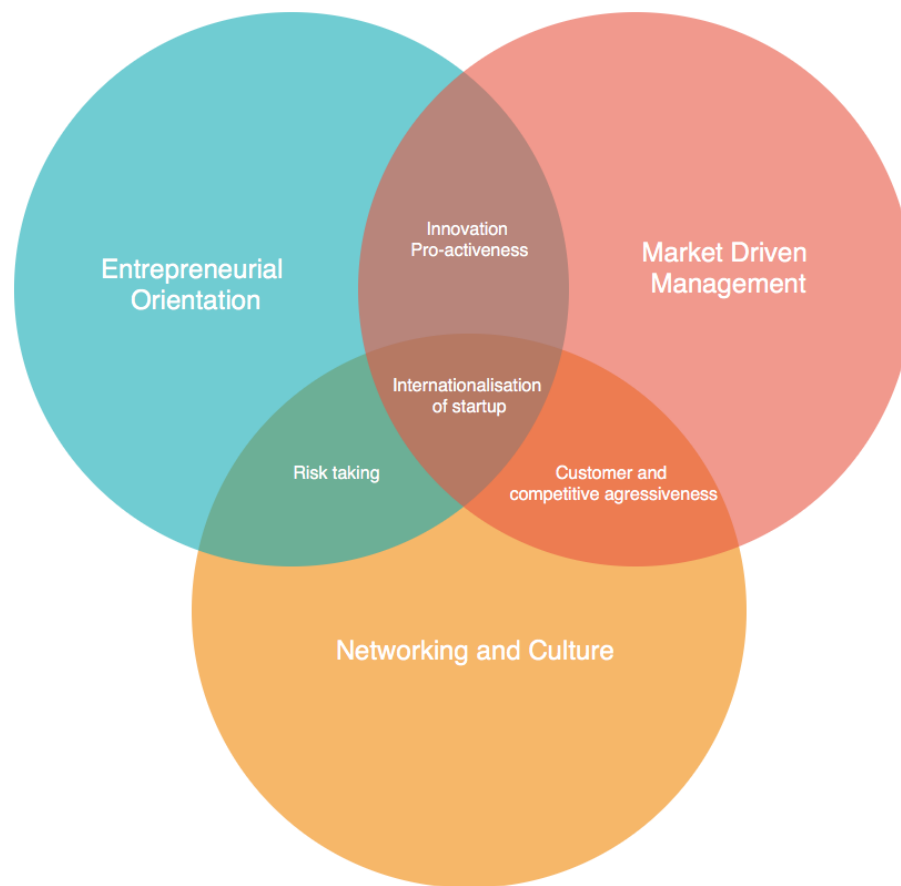


Figure 6. Themes of Interview

3.3 Evaluation of the Study:

In qualitative research there are various ways to evaluate the study depending on the method of research utilized and research questions. In essence there are three ways to evaluate a qualitative research. One is the classic criteria including reliability, validity and generalizability. This criterion is an extension of quantitative research evaluation but is measured through different instruments in qualitative research. The second method to evaluate qualitative research is alternative criteria for qualitative research, which includes confirmability, credibility, dependability and transferability. The third approach is to leave common evaluation criteria and justify the results on its own (Eriksson & Kovalainen, 2004).

However majority of research academics in their evaluation of qualitative case studies have advocated the merits of classic criteria of evaluation, which include reliability, validity and generalizability (Yin, 2003). (Eriksson & Kovalainen, 2004) propose the use of alternative criteria of credibility, transferability, dependability and confirmability; only if the research is relativist or subjectivist in nature. As this

research is based on sound theoretical analysis the classic criteria for evaluation are best suited to evaluate the results of this study.

3.3.1 Reliability and Validity:

Reliability in qualitative research is a classic measure to evaluate the degree to which similar results can be obtained if the analysis is replicated. The idea behind reliability is to provide sufficient proof that another researcher can test the study in similar circumstances to obtain similar results (Eriksson & Kovalainen, 2004).

Validity refers to accurate and factual descriptions of the final result and conclusion in the research study. The study is termed as valid if the results can be tested as authentic and irrefutable. This means that the results have a strong backing and verification in the theory being tested. The most used methods to test validity and reliability are through analytical induction, triangulation and member check. Analytical induction refers to grounding of the data from qualitative research into theory after its coding. This helps the researcher to verify the origin of the data in theoretical forms. Triangulation is the process of cross checking the acquired data through various mediums such as using various methodologies, combining quantitative and qualitative data, using several theories and using more than one researcher. Member check refers to letting the participants of the research recheck the interpretation of the data they have provided to the researcher (Eriksson & Kovalainen, 2004).

This study utilizes the triangulation method to test reliability and validity of the research. From among the types of triangulation, I have used triangulation of data and triangulation of theories to establish reliability and validity in the study. Triangulation of data was done by acquiring data through multiple mediums, the first medium was companies websites, the second was LinkedIn to reconfirm the interviewees profiles, the third was interviews and fourth was a factual check in online Finnish databases. The triangulation of theories refers to understanding and analyzing the case through various theories. This is done in this study by developing a concrete theoretical framework which uses theories such as entrepreneurial orientation, market driven management, networking and cultural impact on international entrepreneurship.

Analysis of the case study conducted using these various theories provides a richer explanation of the cause and effect of organizational factors that influence international entrepreneurship. Furthermore, this case study uses the within case and cross case analysis approach, hence making the study reliable and valid.

3.3.2 Generalizability

Generalizability refers to the process of extending the research into future context and other researches. It differs from the quantitative concept of generalizability which comprises of statistical generalization and is achieved by representative sampling. Instead generalizability in qualitative research refers to analytical generalizability which supports the results of two or more than two cases linking to previous theories to achieve generalization (Yin, 2003). It can also be said that generalizability in case study can be achieved through the formation of a good argument and justification (Eriksson & Kovalainen, 2004).

This study is successful in generating results that have strong theoretical foundation and can be used in a wider context in the future. The results show that more than two cases support the theories used in the research, thus making the research generalizable.

In addition to adhering to the above three classic criteria for evaluation of a case study, this research also fulfills the criteria of generating a sound theoretical foundation by explaining in detail the factors that play a vital role in internationalization process of high tech Finnish startups. This research is also of interest to the startups and their top management thus is of practical interest. The study also ends with concrete results which are generated not due to constraints in time, money or effort. All of these criteria justify the significance and relevance of the research according to (Eriksson & Kovalainen, 2004).

4 EMPIRICAL FINDINGS:

In order to analyze the data collected from the case companies, it is imperative to share the company's profiles so that a wholesome picture can be presented regarding the findings. In this chapter case company's profiles are presented along with the profiles of the interviewee's, this data was collected through online mediums such as the startup company's official website and social networking websites such as LinkedIn, Facebook page (official). In addition to the company's profiles, this chapter also presents a within case analysis of findings of each case separately. These findings have empirical foundations in the theoretical framework of this research and were obtained through semi structured interviews with the companies.

4.1 Introduction of case companies:

Start-Up A:

Start-Up A was established in 2015 by the current CEO in the health tech wearable's industry. Inspired by the Finnish solitude and natural landscapes the product with its innovative technology gained competitive international market share immediately after its launch. Opening the head office in Oulu, Finland, the start-up aimed to gather international attention due to the product's unique features. The initial funding for the product came from crowd funding and generated 1.3 million US dollars. This led to a successful international market expansion to 120 countries in 2017. After creating an international presence, more than 15,000 units of the product were shipped using sales channels such as business to business, retail and E-commerce. In 2019 the second version of the product was launched, selling 11,000 units in the pre-production stage (Start-Up A's official website).

Chief Executive Officer- A:

Chief Executive Officer- A (CEO-A) has a double master's degree in engineering from Tampere University, Finland and twelve years of industry experience.

Start-Up B:

Start-Up B was founded in 2005 by the current CEO in Oulu Finland. The product's unique feature was its innovative technology that directly influenced the human brain.

The research and development that provided the inspiration for the product was done in collaboration with University of Oulu and the Start-Up set up its head office in Oulu, Finland. Finnish in origin the start-up the technology provided startup with an international customer base on its product. Hence start-up B became an international new venture on the launch of its product in 2007. This meant that Start-up B had an international customer base and operated in various countries. Currently there are over 90,000 customers of the product worldwide (Start-Up B's official website).

Chief Executive Officer- B:

Chief Executive Officer- B (CEO-B) has a master's degree from University of Oulu, Finland and twenty-five years of experience in international entrepreneurship.

Start-Up C:

Start-Up C was founded in 2013 by the current CEO in Tampere, Finland. It was launched as a spin off company of Tampere University of Technology, Finland. The research and technology of this Start-Up is aimed to monitor and report neurological patterns for doctors and their patients. The Start Up has three product lines, aimed to cater to a wide majority of customer needs. The start-ups management wanted to create an international customer base from the beginning. However it took them one year to disassociate themselves from the university and concentrate on their international market strategies. Currently they have customers in the United States and UK market apart from Finland (Start-Up C's company website).

Marketing Director C:

Marketing Director (MD-C) has a master's degree from Tampere University, Finland and five years of experience in international marketing and sales.

4.2 Within Case Analysis:

In this section I present the within case analysis of three Startup's that were interviewed for this research

Start-Up A:

Entrepreneurial Orientation:

Operating in a high growth market of health tech startups, Start-Up A associates the success of a startup with exponential growth and achieving its growth targets. Despite

launching the product one year after the inception of the company, Start-Up A was international from the beginning. This product launch attracted international crowdfunding investment, classifying the Start-Up as an international new venture (CEO-A, 2020). Crowd funding is the method of obtaining investment for a new venture from many individuals in return for future equity or products (Mollick, 2014)

In regard to entrepreneurial orientation, this study utilizes three constructs, innovativeness, pro-activeness and risk taking, developed and presented by (Miller, 1983) and (Covin & Slevin, 1989) to gauge the entrepreneurial flexibility of the company. The startup's final product was developed on innovate technology which provided them a competitive edge in the market. Therefore, we can classify the startup as highly innovative. Dealing with a cross cutting technological product line the research and development team of Start-Up A was constantly exploring innovation and technological advancements. Health tech is a competitive industry for startups and in order to maintain the entrepreneurial advantage innovative solutions are necessary (CEO-A, 2020). This also makes the Start-Up proactive in implementation of these solutions through product line in the market.

“If your team is not proactive in understanding the market dynamics and delivering results on time, the entrepreneurial efforts in international markets could suffer.”
(CEO-A, 2020)

However, being innovative and proactive comes along with certain risk-taking decisions, Start-Up A termed itself as conservative and risk averse when it came to financial risk taking. The focus of the Start-Up at this point was growth and to be profitable, therefore any financial risk that could jeopardize this objective was not a possibility. In terms of technological risk taking, Start-Up A was futuristic and advanced. (CEO-A, 2020)

This approach is interesting to compare with the research by (Covin & Slevin, 1989) on entrepreneurial orientation which states that risk taking allows a company to explore more international opportunities and eventually leads to development on entrepreneurial orientation. Operating in a high-risk market, Start-Up A is

conservative in their approach towards financial risks which implies that this approach must hinder them from some growth opportunities.

The CEO also shared the decision-making process of top management. According to him where the top management was taking independent decisions regarding the product and business activities of the startup internationally. These decisions were still monitored by a board of directors. Which would only intervene if the decisions were deviating from the startups goal of growth. In entrepreneurial orientation, Start-Up A was somewhat entrepreneurially oriented. Where their approach towards innovation and pro-activeness was well suited to international entrepreneurial orientation. The risk taking could be improved for better market results.

Market Driven Management:

During the process of developing their product, the top management and team was mindful of creating an international customer base and therefore designed the product to cater to international markets. This ambition was further fulfilled through an international funding enabling the startup to operate internationally early on. Currently Start-Up A is serving out of Finland, however they have international facilities in Estonia, Poland, Singapore, US and UK. Although all the practical things are run out of Kempele, Finland (CEO-A, 2020).

The Start-Up keenly advocated its product as a front runner in its category. Despite not having any direct competitors due to the innovative technology, they were competing with major brands as indirect competition. This served as a driving force for the Start-Up to put *customer in the middle* (CEO-A, 2020).

This approach provided them with customer knowledge in international markets and catering to these needs they were able to develop customer linking. In view of market driven management, customer sensing is related to retention of existing customers as well as generating potential future customers. Start Up A through their strategy of putting customer in the middle is actively pursuing a market driven management role.

(CEO-A, 2020) also shared their customer strategy of operating in international markets. The product is designed for certain type of individuals and the target customer is demographically segmented. This segmentation is partly based on location and income, hence before venturing into a market the team conducts analysis of the required customization of the product. Although the Startup is operating in majorly English and German speaking countries, they localize the product according to the intended market.

In terms of dealing with competitor's the startup was highly competitive towards their customers, due to the innovative technology used by their product. This enabled them to gain a competitive edge in the market over competition. As a researcher I observed, on their website that the competitive marketing was intensely aggressive. The Startup A was actively advocating how their product was ultramodern and in terms of usage consumer friendly. Showcasing that the startup's strategies towards competition were preemptive and therefore highly competitive.

The CEO was of the view that by keeping customer as their priority and directly dealing with them provides the Start up with direct information of what the market requires, this leads to customer retention and an aggressive competitive campaign also generated potential customers.

Networking and Culture

In addition to being conscious of the requirements of customers and the international market, (CEO-A, 2020) explained how they localize the product according to a specific international market. The localization of the product was done through usage of local language and employment of local personnel in the team. Showcasing significant cultural sensitivity while marketing the product in international customers.

“When you are going directly to customers, you need to be sensitive and aware of the message.” - CEO-A

Furthermore, as a startup having limited resources they could not invest in cultural modifications for individual markets. Rather Start-Up A employed someone that

understood the language and cultural patterns (CEO-A, 2020). In (CEO-A, 2020) observation the buying pattern of individuals is reflective of their culture and thus impacts the startup policies.

Regarding networking and how it effects the decision making of the startup. (CEO-A, 2020) acknowledged that networking was important when it came to visibility and funding but for this startup the digital domain was more important than the physical one. This was mainly due to the reason that while dealing with customers directly, online channels were better and global. Hence online networking was an important tool for the top management.

However past networking and experiences contributed a lot to building of Start-Up A. As recalled by (CEO-A, 2020) his past experience and education guided him to take better decisions when it came to international markets. The majority of core team had technical experience in a multinational and developed their skills there. They also learned a lot about customer behaviors while working for the Finnish Tech giant Nokia which came handy during the startup's strategy development.

Start-Up B:

Entrepreneurial Orientation:

As a researcher, the CEO and founder of Start-Up B understood the importance of creditable high technology in the health tech start up industry. Operating initially in various European markets, the research and development team of Start-Up B was highly innovative regarding generation of new technology and ideas for the product. This high innovation technology eventually led them to grasping the attention of consumers internationally and generating revenue.

The (CEO-B, 2020) associated the risk with a startup extremely high in comparison to other normal companies. This was usually due to high level of innovation and development costs of an unknown market product fit. The startups usually became successful by getting high returns from a high-risk tradeoff. This is only possible through the combination of good innovation and high-risk taking strategies. Start-Up B's risk-taking policies were open-minded (CEO-B, 2020).

We can say that the startup was proactive in focusing on the market requirements and customer needs. (CEO-B, 2020) was actively involved in vocalizing the products features online and connecting to potential customers. According to the CEO, a proactive startup can sense future market trends and needs rather than a docile one. The decisions taken in a startup are centralized and, this is what makes it readily competitive in comparison to other organizations. Start-Up B is highly autonomous in taking their decisions no voting is required and the process is highly concentrated (CEO-B, 2020).

Regarding entrepreneurial orientation, the findings show that Start-Up B was highly innovative, risk taking and proactive.

Market Driven Management:

When Start-Up B entered the market, they were catering to Finland and European Union, making it an international new venture. Still initially most of the sales came from the Finnish market. At that time the Finnish market's turnover was worth one million euros, Start-Up B doubled it within one year of entering the market (CEO-B, 2020). The CEO shared statistical reports to showcase that, in two years Start-Up B was responsible for lifting the market by 20-30 percent. This symbolizes the impact and overall success of Start-Up B in health technology sector.

The CEO also explained how necessary it was to have a sound marketing and sales team in place for a startup to be extremely successful. The product market fit is the biggest challenge according to (CEO-B, 2020), before going into the market it is not known how and where the new technology fit for certain. That is also the most time-consuming part of developing the product strategy for a startup. To sense the market and derive required information from it, is necessary for a startup before launching its product (CEO-B, 2020). These remarks by the CEO show that the top management was mindful of market sensitivity and therefore made policies related to market driven management.

While operating in health high tech the market growth rate is very high, however for Start-Up B the market was still growing in comparison to their assumption that it was

a mature market. (CEO-B, 2020) shared that it came as a surprise to them that the market was very conservative in terms of innovation and new ideas. The consumers were open to new ideas however the health professionals and doctors showed some resistance. The health professionals believe that the technology needed to be at least 10-15 years old in order to be credible. In this scenario Start-Up B being a highly innovative business had to face some difficulty in the market. However, since the technology behind their product was suitable and effective, they gained the attention of the consumers.

“We were operating on a very low budget, and hardly spent on the marketing of the product.” (CEO-B, 2020)

The consumers lead the public opinion in their case and encouraged sales in the point of view of the CEO. Therefore it is important to connect with the consumers and understand what they need from the innovation that you are providing (CEO-B, 2020).

“You need to have very solid scientific knowledge backing of medical experts for consumers to understand you” (CEO-B, 2020)

The CEO also shared that most of the sales came from the attention by the consumers. At that point they were not using any money on advertising. When they did use money for advertising the sales dropped and the customers thought that your innovation needed to be advertised as your product was not up to the mark on its own. The perception of the consumers was that “Science comes only for free” (CEO-B, 2020).

In regard to competition, (CEO-B, 2020) shared their stance that the company never actively pursued a competitive strategy towards competition, they were mostly focused on generating attention and reaching the target customers. Even the advertising and marketing of product were not highly funded by the Start-Up but still they were successful in generating sales.

Start-Up B was generating an online presence to deal with competitors and customers, they were using social media platforms to advertise and target the customers. Initially they used gorilla marketing which was extremely beneficial for the startup. These

strategies not only show success in their international entrepreneurial endeavors but also signify the importance of market sensing and customer sensing for startups.

Networking and Culture:

Initially to gain enough market share networking plays a vital role, especially in the scientific community. When you are dealing with high tech health industry the credibility of your product will drive the customers to purchase it (CEO-B, 2020).

The CEO feels that cultural norms do have a role to play when considering an international opportunity abroad, however cross-cultural differences do not impact highly innovative products. Within team, personality differences exist, hence they are not related to the cultural differences. They were considered as personality traits and not a derivative of a specific culture. (CEO-B, 2020). Some cultures have authoritarian traits which should be considered when dealing with them but majority of the time due to globalization these differences have been marginalized (CEO-B, 2020)

It is important in the CEO's opinion to build social and business networks having high trust and cooperation in order to succeed in any market. There have been instances in the professional life of (CEO-B, 2020) that were guided by his experience and education. These experiences are partly built from the interaction with networks. It can be deduced from this that networking is largely done through online channels and focus on generating high trust with the customers. Where culture does not seem to impact an innovative technology adversely, language and consumer buying patterns largely influence the product.

Start-Up C:

Entrepreneurial Orientation

When Start-Up C started their operations, the market expectation was for it grow very fast as any traditional start up. However, as a health tech startup they had two side of operations to deal with, one was the medical aspect of gaining the license and second was the hardware set up. Both the operations took longer than expected, especially the medical approval for the product (MD-C, 2020).

The startup phase of Start-Up C was prolonged in comparison to the traditional time of startups. They dropped out from the traditional definitions of exponential growth in startups. Considering that the growth potential in health tech startup market is huge, Start-Up C considered its product and market as scalable and they associated themselves to cater to the global customer market. Thus Start-Up C is considered an international new venture (MD-C, 2020).

However, (MD-C, 2020) explained the reality of a high tech health market, as very fragmented and dispersed. The variation is huge from city to city, district to district, some countries react to it very slowly and are hesitant to adopt any new technology related to health tech. Therefore, this presents a challenge in terms of scalability in the market. Nevertheless, Startup C has a proactive market strategy in analyzing the trends and customer needs. They are directly dealing with the customers and are constantly exploring the best channels to cater to international markets.

In terms of innovation, Start-Up C is a high technology innovation which is one of its kind so that eliminates most of the competition and terms the Start-Up C as high on innovation policies (MD-C, 2020).

“Risk taking however is a constant part of operating in a startup environment and without which no results are achievable- (MD-C, 2020)”

It was found that the startups risk taking policy was moderate, in terms of financial investment as a startup they were not able to divulge in a high-risk market.

Market Driven Management:

The market is highly competitive in the health tech sector; however, Start-Up C does not have direct competitors due to the innovative technology of the startups product. (MD-C, 2020) mentioned that they could collaborate with some competitors. The startup is trying to change some consumer’s perspective from doing things the old way to doing things the new way. This can be termed as customer sensing strategy on the startups part.

One of the major problems starting from a market in Finland was that the public sector had an alternative in the market therefore creating a market space for Start-Up C's product proved to be a challenge (MD-C, 2020). Hence, while considering an international market to venture to the startup steers clear of any country that has a similar product already available. This is done through market sensing of not exploring some markets (MD-C, 2020).

In terms of competition the marketing Director of Start-Up C shared that did have a competitive advantage in terms of better technology and product fit. However, their competitors had the lead of establishing themselves in the market before Start-Up C and generating loyal customers.

"It's not necessarily a bad thing for Start-Up C, as we can swoop in and tell those customers that our product does things in a better manner." (MD-C, 2020)

These remarks show that the Start-Up C has a competitive customer sensing and market sensing strategy in place. The marketing director shared that the health care high tech markets are so diverse from country to country that every feature has to be customized. Giving an example of the market differentiation the marketing director shared statistics of the Finnish and UK market. The Finnish market had a unit of 1000 to 3 caretakers where the UK market had a ratio of 10,000 to 3 caretakers.

Networking and Culture:

The networking played a crucial role in developing connections for Start-Up C, the marketing director shared how networking is a chain process and usually dependent on who do the people they know further. The top level health care professional tend to know each other in different countries so according to (MD-C, 2020) this networking proved crucial in launching the product with recommendations in a new market.

In case of Start-Up C culture played a crucial role when marketing the product and building customer relationships. According to (MD-C, 2020) different countries react different to the use of products especially if they are technology related. Not everyone is especially technology savvy, this is true for countries outside Nordic region. In Start-

Up C's experience consumers had less expectations and were less interested in the features of the product as long as it was delivering the required outcomes. In case of Finland (MD-C, 2020) noted that they wanted to see data and required in depth knowledge. These remarks show that in Start-Up C's experience culture effects the consumer patterns and in result should influence strategies of startups while growing internationally.

In regard to strategy, (MD-C, 2020) associated Start-Up C's strategy to be a step by step procedure, They receive new information and something changes so the change is reflected in the strategy of the company as well.

4.3 Summary of Empirical Findings

This section includes the analysis of data collected from the interviews for this research study. The three case startups have been analyzed independently against the optimal strategies that influence international market success. These factors are entrepreneurial orientation, market driven management and networking and culture. This research's main objective is to understand how and what strategies influence a company's success in international markets. Although each startup was found to have its own strategy towards international entrepreneurship there were certain similarities and patterns found in the analysis. I will present these similarities and commonalities in this section of the chapter.

According to existing academic literature, entrepreneurial orientation is the extent to which an organization can exploit international opportunities (Wach K. , 2015). This is measured by the level of pro-activeness, risk taking ability, innovation, competitive aggression and autonomy according to (Miller, 1983) and (Covin & Slevin, 1989). The analysis regarding entrepreneurial orientation showed commonality in high innovation among all the startups. This might be due to the fact that a high-tech industry has been chosen for this study. The startups were also found to be pro-active in their approach towards international markets and were actively seeking opportunities abroad. However, there were some inconsistencies in terms of the startups risk taking. While some startups such as Start-Up B was high regarding risk taking others including Start-Up A had conservative policies and Start-Up C was moderate in their policies. These differences are explored in detail in the cross case analysis in the next section.

Another common aspect between the three case companies was their approach towards market driven management, all the startups were found to have a proactive approach towards marketing and customer sensing. It was due to the fact that they were selling directly to the customers mostly with only a few instances of a retailer involved as a middleman. This provided them with clear insights regarding customer's needs, requirements and market dynamics. We can establish from these communalities that market sensing does have a significant impact on international entrepreneurship of a high-tech startup.

In regard to networking and culture, all the CEO's admitted to the importance of social and business networks for successfully establishing themselves in the international market. Three common aspects were found in regard to networking among all the three cases, these were online and social networking, high level of trust and relationships and direct customer interaction.

However, their approach to dealing with culture varied from each other. In one case culture was seen as a crucial part of product development in international markets due to language differences and local team recruitment (Start-Up C). Where the startups had to customize their market fit strategy according to consumers understanding and expectations from the product. These expectations arose due to differences in culture. While in another case culture did not hinder the product development aspect but was a minor adjustment (Start-Up B). This startup found culture to be a socially strict in certain cases. This research study has derived conclusions that in the health tech start up sector most successful international new ventures have market driven policies and are entrepreneurial orientated and have networking strategies, however cultural impact is not that significant when applicable to health tech innovation start-ups. These findings are align with previous research on entrepreneurial orientation (Wach K. , 2014) as well as market driven management and networking (Laanti, Gabrielsson, & Gabrielsson, 2007)

4.4 Cross case analysis

According to (Yin, 2003) a cross case analysis is used to aggregate findings from multiple cases to analyze communalities and differences present in the individual

cases. This chapter presents a cross case analysis of the individual cases. A within case analysis of individual cases has already been presented. This section explores the commonalities and differences identified from the within case analysis. It further seeks explanations of these commonalities and differences in the existing academic literature. This is done through linking and comparing the previous research findings with those in this research. Through a cross case analysis technique, the real decision-making process of Finnish high-tech health startups can be understood.

4.4.1 Entrepreneurial Orientation

There were three factors of entrepreneurial orientation developed by (Miller, 1983) and (Covin & Slevin, 1989) to assess an organization's ability to be entrepreneurial. These three factors have been used in the research to understand the three health tech startups' entrepreneurial orientation. **Table 3** summarizes the findings of entrepreneurial orientation from the health tech startups.

Table 3. Entrepreneurial Orientation of case companies

Entrepreneurial Orientation Factor	Start – Up A	Start – Up B	Start – Up C
Innovativeness	High	High	High
Risk Taking	Low	High	Moderate
Pro - activeness	High	High	High

It is evident from the findings above that all start-up companies have a significant relativity towards innovation and support generation of new ideas and technology that is essential for a high-tech startup to compete internationally. In entrepreneurial orientation context innovativeness refers to the generation of unique solutions through creative thinking (Knight, 2001) and is reflected in the organization's process and product development (Lumpkin & Dess, 1996). The findings of this research are aligned with previous research findings, (Laanti, Gabrielsson, & Gabrielsson, 2007) studied Finnish wireless born global companies' international entrepreneurial processes. Their research findings advocate that innovation plays a crucial role in internationalization of a startup by providing them with the first mover advantage in the market. This is evident in the case of startups studied in this research as well.

Innovative technology was the base for product development in the three case startups. It was also an essential competitive advantage for the startups to be prosperous in the international markets.

Furthermore, from the empirical findings of this research, all the case companies depended on comprehensive technological support for customer generation and capturing market share internationally. In case of Start-Up A, they were able to generate investments globally through crowd funding only based on their cut edge innovative product. In case of Start-Up B, years of research and development resulted in an innovative product which led to a customer base and generated sales. In terms of Start-Up C, despite having a public sector competitor their innovation provided better results. This comparison generated customers and led to a market presence internationally. From these findings we can summarize that innovativeness determined international success of health tech startups in Finland.

These research findings are similar to previous research by (Avlonistis & Salavou, 2007), that conclude that product innovativeness is comparatively high in active entrepreneurs and a positive relationship was found between product innovation and entrepreneurial orientation in Greek SMEs. (Luno, Wiklund, & Cabrera, 2011) in their research findings conclude that risk taking, and pro-activeness influence the innovative policies of a firm to generate new technology rather than combine or adopt technology. Suggesting that the three constructs of entrepreneurial orientation are interlinked with each other and one compliments the other positively.

However, the research findings regarding innovation in this study are contradictory to the findings of (Frishammar & Andersson, 2009) that found no link between innovation and international entrepreneurship. According to their research which was conducted on the data from 188 Swedish SME's, a firm that is invested in developing innovative technology and products is less focused on international entrepreneurial efforts and therefore fails in international markets. This is contrary to the research findings of this study. The reason for this difference lies in the market type of the studied case companies. As this research is conducted on high technology startups innovation is a major contributing factor to their product and entrepreneurial orientation. However it is not necessarily the case in regular product SMEs, as in the

study by (Frishammar & Andersson, 2009). Hence we can conclude that innovativeness positively impacts the success in international markets for high tech startups where more research is required of its impact in the case of non-high tech SMEs.

Previous research by various scholars (Lumpkin & Dess, 1996) and (Knight, 2001) also shows that the three constructs of entrepreneurial orientation can have a varied level and still an organization can be overall entrepreneurially oriented. (Wach K. , 2015) also supported the difference in intensity of these three constructs, implying that the presence of these three constructs is necessary to consider a firm entrepreneurially oriented. However, it is not necessary for them to be high in intensity for the firm to be entrepreneurially oriented.

This is evident in the case of financial risk-taking capabilities of the three startups in this study. Where Start-Up A is conservative in their risk-taking approach, Start-Up B is high in taking risks and Start-Up C is moderate in financial risks. When we compare the three startups with their international entrepreneurial endeavors, Start-Up B which clearly signifies a higher risk-taking approach to international opportunities results in generating more customers and capturing a major international market share.

These findings are simultaneous with previous research findings by (Kropp, Lindsay, & Shoham, 2008) which state that pro-activeness and risk taking are directly related to the international efforts of a firm, while innovation cannot be assessed as a contributing factor in startups. The results are also realigned with the study by (Basile, 2012) which proved through his research on Italian SME's that risk taking behavior of a firm influences its decision to internationalize which in turn influences its business performance.

However, in the case of Start Up B, financial risk taking is associated with product development and entering foreign markets without being sure of the product market fit. This presents a higher financial risk and in Start Up B's case results in better international presence. Still in the other two startup cases; the international market success is not compromised due to low and moderate risk-taking decisions or capabilities. This can be explained through previous researches (Kreiser, Marino, &

Kuratko, 2013) that studied the three entrepreneurial orientation factors independently and identified a negative relationship between risk taking and small and medium enterprises. (Hughes & Morgan, 2007) in their research found that in new high technology firms, risk taking has a negative impact on business performance. (Maksimov, Gilbert, & Fernhaber, 2014) also in their research found that medium level of risk taking leads to greater international prosperity in firms. These prior studies analyzed the three constructs of entrepreneurial orientation independently. This suggests that when taken into consideration independently innovation, pro-activeness and risk taking have their different impact on internationalization of a firm. While risk taking combined with other two constructs led to an overall positive impact on a firm's international market success.

From previous research and this study, we can summarize that low level and moderate level of financial risk taking is beneficial for a startup to internationalize. While a high financial risk must be combined with high innovation, pro-activeness and favorable external factors in order to be beneficial for the startup. The lack of risk taking might also be due to the lean structure of these startups, in their research (Ladd & Kendall, 2017) concluded that the lean process of startup changes the entrepreneur's ability decision making ability to create new ventures while minimizing impulsive risk taking. The entrepreneurs in these case startups are all well experienced and considering the lean structure of these startups might have minimized the risk-taking ability.

There is a commonality in this study's findings regarding pro-activeness of the startups. All three case startups were found to have high pro-activity related to international entrepreneurship. Pro-activeness in entrepreneurial orientation refers to actively pursuing international opportunities and eradicating competitors through market positioning and achieving firms objectives (Knight, 2001). The startups in this case study were actively exploiting and exploring international opportunities. There was some variation found in competitive aggression of the startups. Where Start-Up A was found to be highly competitive in their product marketing and positioning in comparison to other two startups. The other two startups were also competitive but in comparison Start-Up A was leading in being proactive. This is due to the reason that Start-Up A had indirect major international brands as competitors in comparison to other two startups.

These findings are similar to previous research findings by (Frishammar & Andersson, 2009) that established only pro-activeness of a firm having positive influence on international scope. (Kreiser, Marino, & Kuratko, 2013) established a positive relationship between SME's performance internationally and pro-activeness. (Hughes & Morgan, 2007) while independently analyzing the components of entrepreneurial orientation established a positive relationship between pro-activeness and business performance of a firm internationally. Thus, we can conclude that being proactive has a positive influence in creating a successful international presence for a startup. This is because pro-actively seeking out opportunities and placing the product above competitors provides the startup an edge in the market. This edge is later useful in attracting customers and generating a market presence. Startups are generally more pro-active to establish themselves due to limited resources (Laanti, Gabrielsson, & Gabrielsson, 2007).

Table 4. Summary of Entrepreneurial Orientation of Health Tech Start-ups

Start Up	Characteristic	Findings	Analysis
Start Up A Start Up B Start Up C	Innovativeness	High innovation positively impacts entrepreneurial orientation of a start up	High tech innovation in a startup provides them with a competitive advantage internationally (Avlonistis & Salavou, 2007)
Start Up A Start Up B Start Up C	Risk- Taking	Conservative risk taking High risk taking Moderate Risk Taking	Risk taking independently does not significantly impact the entrepreneurial orientation of a startup (Ladd & Kendall, 2017) (Hughes & Morgan, 2007)
Start Up A Start Up B Start Up C	Pro- activeness	Pro activeness positively influences the entrepreneurial orientation of a Start Up	Highly proactive startups identify international market trends rapidly which leads to international market success (Frishammar & Andersson, 2009)

Table 4 above summarizes the analysis on entrepreneurial orientation of high-tech health startups and its impact on international market success. The point of difference was found in risk taking strategies of the three startups. Analysis based on prior literature explains the risk taking independently does not contribute to the international market success of high-tech health startups. Whereas the startups in this research were found to be highly innovative and highly proactive in seeking market trends and opportunities.

4.4.2 Market Driven Management

Market Driven Management can be described as a conscious effort by management to take decisions based on market orientation and customer needs (Zahra & George, 2004). In this research study two aspects of market driven management were analyzed, first was market sensing and the second was customer linking and sensing. Market sensing refers to understanding and predicting the current and future market requirements. Whereas customer sensing refers to retention of existing customers and developing new customer basis. Retention and developing of customers also requires an aggressive competitive policy to deal with competitors and (Majocchi & Zucchella, 2008). The startups in this research had a similar approach towards market sensing, however their competitors' approach and customer approach varied from each other.

Table 5. Summary of Market Driven Management of Health tech start-ups

Start Up	Empirical Findings	Analysis
Start Up A	Market knowledge Competitive aggression Customer relationship	Market knowledge enables the startup to develop an effective product market fit and positively influences the market success of a start up (Zahra S. A., 2008). While positive customer relationship policies resulted in generation of revenue and competitive aggressiveness maintained the competitive advantage of the startup (Gnecchi, 2009) (Weerawardena & Cassb, 2004)
Start Up B	Market knowledge Customer relationship	
Start Up C	Market knowledge Competitive aggression	

The **Table 5** showcases the empirical findings of market driven management in this research. The important characteristics, market knowledge, customer relationships and competitive aggressiveness regarding market driven management were found in this research study. These three characteristics significantly impacted the market driven strategies and international market success of the case startups.

The case startups studied in this research demonstrated their approach towards market knowledge through the ability to develop a product intended to compete in global markets initially from the launch. A crucial part of market driven decision making is to ensure that the developed product caters to market requirements. Knowledge is gathered from the market regarding which technology and product features are best suited for product development. Start Up A demonstrated that through their first prototype product launch which provided them the international funding for a global product launch in second stage. This is similar to previous research by (Dehghani, Abubakar, & Pashna, 2018) which emphasize the importance of prototyping in order to get feedback and future product development. Start-Up B was aware from the beginning regarding their product market fit and developed a product that fulfilled the innovative market driven methods. According to the CEO, they were mindful that an essential feature of the product was user friendliness as no alternative existed in the market. Customers required a product that they could relate to. Start Up C also utilized the market knowledge gathering techniques in positioning their product according to market requirements. This is shown in their decision to venture into selective international markets that were fruitful in adopting the innovative technology. These market knowledge gathering strategies have been explained in detail in similar researches by (Zahra S. A., 2008) (Dehghani, Abubakar, & Pashna, 2018).

Furthermore, CEO-B stressed that product market fit might be the biggest challenge faced by a startup and hence emphasized the importance of market sensing before entering the market. This can also be linked to the startups right time to enter the market. As shared by CEO-B the market was not mature as they had previously thought upon entering and they had to readjust some policies to fit the market. We can also deduce from this that startup B received the first mover advantage in some of the markets. This gave them a competitive advantage over their competitors. In

comparison Startup C and Startup A encountered an already existing market and therefore required better competitive policies than startup B.

In regard to competitive aggressiveness and consumer-based strategies, the three startup's approaches varied from each other. Startup A was the most pro-customer startup, they had the most aggressive policy to deal with competitors. Startup A was "putting the customer in the middle." When developing their product and marketing it. Their marketing campaigns online were aggressively attempting to make competition irrelevant by advocating the product as better than the rest. Previous research by (Weerawardena & Cassb, 2004) (Gnecchi, 2009) (Vallini & Simoni, 2009) and (Ruokonen, 2008) support the empirical findings of this research regarding cultivation of customer relationships for prosperous international market success. Customer relationship building can result in profitable business and long term success for a startup (Vallini & Simoni, 2009). While competitive aggressiveness provides the startup with an advantage over competitors in foreign markets (Weerawardena & Cassb, 2004).

Start-Up B had a different approach to deal with customers and competitors, they focused only on generating customers and not on the competitors. This might also be due to their first mover advantage in the market and no direct competitors. However, the CEO mentioned that they faced a lot of apprehension from the medical scholars and customers regarding medical research behind the product. According to him, marketing the product actively decreased its creditability and sales among consumers. This highlights a distinct point in the health tech market that active marketing is determined to be needy and unauthentic by the consumer. This strategy can be aligned with previous research by (Vallini & Simoni, 2009) as market driven governance, where the product itself drives the market and consumers.

Start-Up C on the other hand had a deflecting strategy by avoiding competition in international markets. According to their marketing director they avoided international markets where similar products exist. However, in case of competitors they advocated the superiority of their product to retain and generate customers (M.Brondoni, 2008). Finally, in combination all three startups had various competitive and customer strategies as required by their markets but they were proactively seeking customers

and retaining old ones. This difference in strategy with competitors provides us with different perspectives of competitive aggressiveness in market driven management. The drive to generate a customer base by innovative technology automatically generates a competitive advantage that is required in market driven management (Dehghani, Abubakar, & Pashna, 2018).

This analysis leads to the possibility to explore collaboration and convergence of market driven practices with the consumers in order to generate a competitive advantage. Competitive market convergence refers to the collaboration of innovation and product features in order to satisfy a global consumer (Rancati, 2010). Many top global organizations have utilized this strategy to gain more consumers worldwide and gain insights to global competition and consumer demand. Examples are collaboration between general motors and Suzuki (Rancati, 2010).

4.4.3 Networking and Culture

In this research study, networking and culture was analyzed keeping in mind the international entrepreneurial context. Networking has been found to play a crucial role in opportunity recognition and exploitation (Ellis, 2011). Whereas culture has a direct impact on entrepreneurial activities of a nation (Radziszewska, 2014).

Networking was analyzed in this case study in assessing opportunities through social and business networks, the experience and education of founders. As previous research discussed the possibility of decision making based on the founder's prior experience (Zahra, Korri, & Yu, 2005). Culture in this research was analyzed as having an impact on organizational strategies to internationalize by the startups. As previous research findings suggest that cultural implications are effective in developing an entrepreneurial strategy aimed for international markets (Radziszewska, 2014).

All the top management in this research found networking to be a crucial part of discovering and maintaining entrepreneurial activities internationally. The key findings regarding networking from this case analysis study are the importance of online networking, especially with the customers. Generating high trust with the stakeholders, and the education and past experiences of the founders.

Online networking was a significant tool utilized by all three startups in their customer and competitor's strategies, as well as for investment generation. This was particularly done by Startup A and Startup B. Startup A generated crowd funding investments online and created a global online presence with customers and stakeholders. Startup A also had an aggressive competitor's policy on their website and was mainly advertising online. Thus, creating online networks with consumers. Start up B also created an online presence initially at launching their product on social media and reached out to consumers through online networks. Therefore, creating a global online networking base of customers. These findings are supported by previous research (Scarmozzino, Corvello, & Grimaldi, 2017) which indicate that professional social networking websites also known as online networking plays an integral part for startups in knowledge seeking and entrepreneurial learning. This can also be termed as their social capital and is similar to previous research findings by (Hamill & Gregory, 1997) that advocate that online networking is essential in international market success as it eliminates time difference limitations and efficiently reaches consumers in a time and cost effective manner.

Start up C on the other hand has less of an online customer network and more of a stakeholder network in real form. They are networking more with their scientists and technicians that are close knit globally and through them new international opportunities are generated. Prior research (Rancati, 2010) termed this as networking between distribution channels and building competitive network relations. The research suggests that in a global market developing complimentary networks results in better positioning of the product and recognition of opportunities.

Another aspect of networking discovered in this research study was building high level of trust within their networks with consumers and stakeholders. Startup A was doing that through their "customer in the middle policy" and by being risk averse and maintaining their trust of stakeholders through investing. Startup B was generating high trust through connecting with their customers and gaining their approval above the scientists and therefore deriving the demand for their product. Startup C was gaining trust of the medical professionals and stakeholders in order to generate creditability with the consumers. Hence all the startups were focusing on building trust

within their external networks. This is due to the market driven management policies utilized by the startups to generate consumers and explore opportunities. Hence we can summarize that opportunity knowledge was created through networking directly with the consumers and generating high level of trust. This is similar to previous research by (Moensted, 2010) on Danish and French high tech SME's and (Ferro-Cortes, Skander, & Prefontaine, 2017) that emphasized the role of trust in customer networking and its impact on international market success.

The education and experience of founders also played a significant part in recognition of opportunities internationally. CEO A and the top management of startup A had prior experience in Finnish tech giant Nokia. Which according to him developed their understanding of consumer behavior and international markets. Startup B's founder had technical educational and prior experience in Finnish multinational health tech Polar, which enabled them to become an international new venture from the beginning. Startup C's founder had prior experience in international marketing and as a university spin off project they had research and knowledge regarding international technical markets. Therefore, we can establish that prior experience and intuition does in fact effect harvesting of international opportunities by startups. This research finding is supported by previous research by (Laanti, Gabrielsson, & Gabrielsson, 2007). The networking and experience of founders was found to have a crucial role in Finnish wireless born global. (Zhang, 2011) further reinstalled that in startups founders who have prior experience can generate more investments in early stage financing and are therefore able to compete better in international markets. (Arenius, Sasi, & Gabrielsson, 2006) also derived results that showed the impact of education of founders on the international market success of their start up.

In regard to culture, the findings suggest that while all startups were mindful of the cultural impact on their internationalization efforts, it was not the main cause of their international market success. All startups were aware that their markets were somehow determined by culture, for example startup A profiled their target customer in a culture that derived significant identity from the language. Therefore, they appealed to the target customer through customizing the product according to the local language. This shows that startup A was culturally mindful, this is also depicted in hiring locals for marketing and distribution so that the product is well received in the market.

Startup B however was not that culturally active in their strategies for internationalization. They did acknowledge that some cultures have different consumer habits and it did make entry into that market difficult. However, it was not a huge part of consideration when entering an international market.

Startup C however, focused on altering their marketing strategy when dealing with different cultures, they found that Nordic culture was more tech savvy as compared to their European counterparts and required more data to convince them. In comparison other cultures did not require as much data backing and just required that the product delivered results. From this analysis we can conclude that start up A used (Hall, 1960) culture segmentation to develop marketing packages for their target customers. Hence culture does have an impact on the consumer buying patterns and perceptions. This is similar to previous research by (McGrath & O'Toole, 2014) (Radziszewska, 2014) and (Mooij & Hofstede, 2010).

The Table 6 summarizes the analysis on networking ties and culture for this study

Table 6. Summary of Networking and Culture of Health Tech Start-ups

Start Up	Characteristic	Findings	Analysis
Startup A Startup B	Networking	Online networking Experience and education of founders High Trust	Online networking generated high trust and effective customer base (Arenius, Sasi, & Gabrielsson, 2006)
Startup A Startup C	Culture	Language Consumer purchasing behaviors	Customizing according to local language and consumer purchasing behaviors led to success internationally (Kacen & Lee, 2002)

From the collective analysis of culture and networking ties we can conclude that for a high tech start up to venture into international markets, networking with customers and competitors is highly recommended. Culture does have an impact in marketing and positioning the product and strategies to eliminate any cultural distances may be effective in generating better consumer results. However, it is important to mention

that in the health tech industry, products are mostly sold due to their innovative technology and wide application so culture might not be the break or make point in consumer consumption patterns. Rather need for health products be the driving force.

4.5 Conclusion of cross case analysis

In conclusion the cross-case analysis of this research provides us with major factors that can be used to understand the organizational factors used by high tech health startups for internationalization.

Firstly, this research is conducted on the health high tech startups of Finland. The startups chosen were international new ventures and known for their rapid internationalization. In the health tech sector of Finland majority of the challenges faced by startups are related to recruitment, finding customers and dealing with regulations apart from obvious challenges such as growth and funding (Health Tech Finland, 2019). In their effort to overcome these challenges, the startups in this case study utilize the entrepreneurial orientation, market driven management and networking approaches.

In entrepreneurial orientation a cross case comparison showcases that innovation and pro-activity has a direct link with international market success of startup. However, risk taking is not necessarily positively related to discovering opportunities and creating product demand internationally. These findings are similar to (Hughes & Morgan, 2007) and (Maksimov, Gilbert, & Fernhaber, 2014). This analysis also showcases that the entrepreneurial orientation factors when studied independently present their individual impact on the startups international performance. As compared to when studied collectively under the umbrella of entrepreneurial orientation.

Entrepreneurial orientation mostly impacts the international entrepreneurship of a small firm by developing internal capabilities while preparing for international opportunity recognition and exploitation (Frishammar & Andersson, 2009). Therefore, it is an umbrella concept and cannot be studied individually. This study shows that the three concepts altogether contribute to the entrepreneurial orientation of the startup.

Secondly, the startups in this study were also market driven in management which added to their international success. The startups policy towards consumers and

competitors were based on knowledge gathering from the market. The startups were aware of their customer's buying habits and requirements before they launched their product. This was done through market knowledge. As a health tech startup in Finland, innovation is the key drive to develop a product but apart from that the interviews showcased an early on internationalization mindset during product development. This is in line with the research by (Rancati, 2010).

Thirdly the startups were aware of different cultural norms pertaining consumer buying patterns and marketing trends. Despite this, only little changes were made while entering a foreign market on the startup's behalf. This research has also found that networking plays a crucial role towards customer satisfaction, retention and opportunity recognition. These findings are aligned with various previous researches (Zhang, 2011) (Laanti, Gabrielsson, & Gabrielsson, 2007) and (Mooij & Hofstede, 2010).

Fourthly, considering the findings of this research study the theoretical framework has been revised as represented in **Figure 7**.

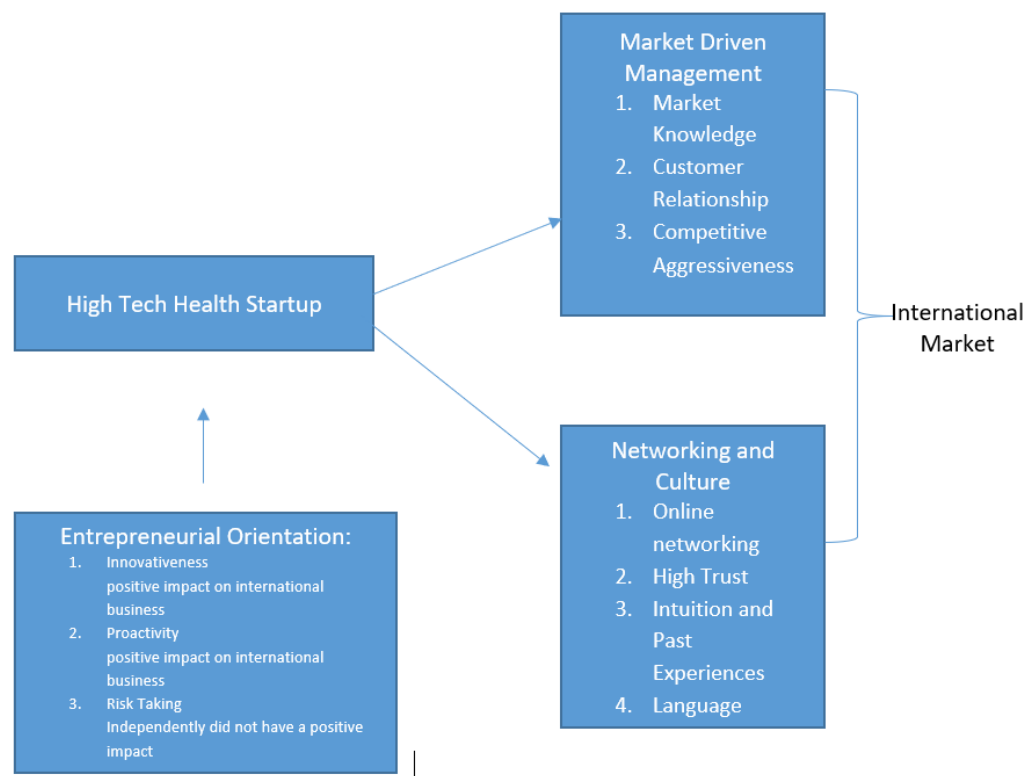


Figure 7. Revised Theoretical Framework and Findings of the study

The revised theoretical framework presents the findings of this case study and is different from the theoretical framework developed at the beginning of this research. As entrepreneurial orientation was found to have a collective impact on the start-ups competencies to be successful internationally, the research findings propose that it is an internal resource for the start-up and effects it directly. Innovativeness equips the health high tech start-up to develop technology that can be competitive in the market. Pro-activeness helps the start-up to distinguish opportunities and trends in the market. Where financial risk taking allows the start-up to invest in a high stakes market.

The research found that all these three attributes when present in the internal competencies of a start-up enables it to proceed with the first stage of product development in accordance to the international market. The start-ups in this research all intended to create a product for global market from the start. Health tech sector being a highly competitive market tends requires market driven management by the start-ups in this research.

Start-ups further utilized market driven managerial policies to establish themselves in the market. This research showed that more focus on the customer preferences rather than competitors was placed by the start-ups. This might be due to the reason that innovative technology and product rendered the competition irrelevant in these high tech health start-ups. Furthermore, market knowledge such as product market fit, consumer preferences and market dynamics was essential before a start-up entered the market. Consumer policies were the key driving force for success of the start-ups in this study. While competitive aggression was demonstrated by only one start-up (A).

In terms of networking and culture, three major attributes regarding networking were found from the start-up. They were online networking, high trust with consumers and competitors and past experiences and intuition of founders. Online networking was a tool used by all start-ups to generate interest in consumers and get to know the market dynamics. In culture the language and consumer purchasing were the main element of interest to the start-ups. They utilized the language to customize entry into a foreign market, while consumers purchasing patterns also impacted their marketing strategies.

5 CONCLUSIONS AND LIMITATIONS

In this chapter the research study is summarized and presented as a complete thesis concept. This chapter also critically analyses the methodology and data analysis to explore research gaps in the study. Furthermore, this chapter also provides managerial implication and suggestions for future work.

5.1 Summary of this research study:

The main purpose of this study is to understand how entrepreneurial orientation, market driven management, networking and culture influences the success of high tech health start-ups in international markets. Secondly this research also analyses the factors that lead to rapid internationalisation and emergence of international new venture in health high tech economy.

In order to satisfy these research purposes, Firstly, this study reviews the existing theories and literature regarding the concepts in this thesis research. It begins with understanding the concept of international entrepreneurship and its importance to an economy of the country. Next it examines the concept of international new ventures and their presence in Finland, this is followed by the identification of health tech start-up sector in Finland and its contribution to the Finnish economy. These reviews' help us understand the research gap that exists in highlighting organizational factors that contribute to the success of high tech health start-ups.

Upon review of the previous research and literature, four contributors were found to have a positive impact on international entrepreneurship of high tech health start-ups. These were entrepreneurial orientation, market driven management, networking and culture. Based on the identification of these construct a theoretical framework and research questions were derived. The role of culture in this study has been discussed in the context of marketing strategies of the start-ups. Previous research verifies that culture has a direct impact on entrepreneurship of a country, this research answers the question if culture is taken into consideration when developing an international strategy. From the point of view of international new venture in health high tech networking has been identified by previous research as a key determinant to explore

and maintain international opportunities, this research explains in detail how networking is done by start-ups. The concept of entrepreneurial orientation has been explained with the help of three attributes of the firm, innovativeness, risk taking and pro-activeness. Market driven management in this research has been explored through the firm's ability to gain market knowledge and their strategy towards customers and competitors.

To answer these questions, semi structured interviews were conducted with top management of the three successful start-ups in the health tech sector of Finland. Utilizing the multiple case study methodology in this research, data was collected through online mediums (official websites, professional social media) and semi structured thematic interviews with the founders of these start-ups. The empirical findings of this data were presented in the form of within case analysis and cross case analysis. The within case analysis provides this study with a basic understanding of how each start-up operates independently. Where a cross case analysis provides a comparative analysis of the strategies of start-ups on the whole.

The empirical findings of this research show that the three constructs of entrepreneurial orientation collectively impact the international performance of start-ups. However, when studied independently "risk taking" was not found to have a direct impact on international entrepreneurship of health tech start-ups. These findings are aligned with previous researches (Hughes & Morgan, 2007) (Maksimov, Gilbert, & Fernhaber, 2014) and (Zahra & George, 2004). Hence concluding that "risk taking" independently does not impact international entrepreneurship. Independently only pro-activeness and innovation contributed to the entrepreneurial orientation of high-tech health start-ups. Also referred in research by (Luno, Wiklund, & Cabrera, 2011) and (Kreiser, Marino, & Kuratko, 2013). This independent explanation can be explained through previous researches, that suggests that risk taking in start-ups is minimized due to the lean start-up approach which conditions the management to be highly innovative and risk averse at the same time. The two balance each other off in the international market. Furthermore the findings of this research show that entrepreneurial orientation is an internal capability of the start-up.

Market driven management was found in this study to play a crucial role towards internationalisation of the start-ups. In particular, the consumer and competitive strategies used by health tech start-ups enabled them to create a successful international presence. This is similar to previous research by (Dehghani, Abubakar, & Pashna, 2018) and (M.Brondoni, 2008) and (Rancati, 2010). In this research the start-ups were succeeding by putting “customer in the middle” reaching out to customers and at the same time rendering competition irrelevant through aggressive product positioning.

There were however some differences found in the empirical results from previous results, for instance “culture” did not play that immense a role in relation to internationalisation of health tech start-ups. This is contrary to previous researches (Radziszewska, 2014) which suggest that culture is a vital component of international entrepreneurship. This difference can be explained through the reason that since health tech start-ups have innovative health products they are in demand across cultures. Still this study shows that language and consumer patterns does impact the marketing and packaging strategies of health tech start-ups. (Mooij & Hofstede, 2010) (McGrath & O'Toole, 2014) in their research derive the same conclusions.

Three determinants of networking were found in this research study that influence the internationalisation of health tech start-ups. First is online networking with consumers and stakeholders, this helped the start-ups with establishing themselves in the foreign markets. Second is generation of high trust among consumers and third is past experiences and intuition of managers. These empirical findings are exact as previous research by (Moensted, 2010) (Laanti, Gabrielsson, & Gabrielsson, 2007) and (Zhang, 2011). Moreover, business networking was found to be more influential on the international entrepreneurial activities of health tech start-ups in this research in comparison to social networking ties. Business networking increases the opportunity of endorsing new health tech products by health professionals. These endorsements lead to positive consumer perception which is required by the start-ups to convince consumers of their products.

An important empirical finding from this research shows that entrepreneurial orientation should be treated as an internal resource rather than an external

organizational factor, whereas market driven management, networking and culture strategies can directly influence the international market presence of a high-tech health start-ups. A successful combination of these internal and external factors was required by the start-up for rapid internationalisation. It was found that being more entrepreneurial oriented and connecting with customers helped the start-ups to create an international market presence more rapidly. Increasing market driven management of the start-ups would lead to successful internationalisation as per the findings of this research.

5.2 Theoretical and Managerial Implications

This research in the light of existing organizational factors, identifies the strategies and policies that successfully help high tech health start-ups to create a presence in international markets. On theoretical level this research examines the four concepts of entrepreneurial orientation, market driven management, networking and culture in the context of high tech health start-ups by analysing the existing theories and literature. It provides grounds for analysis of which theories are effective practically in international markets. It also provides theoretical analysis of the four mentioned concepts in regard to start-ups. The empirical findings show that risk taking element of entrepreneurial orientation is not really applicable to research on start-ups. The results of this research also showcase that market driven management with a special focus on consumer is highly effective. While online networking and generation of trust are additions to already existing literature on networking and start-up entrepreneurial research. This study opens up further research on topics related to international entrepreneurship and high tech start-ups by generating theoretical basis for further research.

This research study also derives three fold managerial implications from its empirical findings. Firstly, the results of the study highlight successful customer practices in the health tech start-up sectors, such as putting customer in the middle and directly marketing to the customer through online channels. These practices can be adopted by managers in order to be successful internationally. Secondly, this research also showcases how innovation can eliminate competition in international markets. Hence,

implying a strong research and development initiative to be adopted by managers. Thirdly this research provides guidelines for customizing the marketing and product positioning according to culture and consumer buying patterns in foreign markets. This can be highly helpful for managers looking to adopt international marketing and positioning strategies. Furthermore, this research provides a new contribution to networking strategies of health tech start-ups, online networking. Global markets are connected online and interacting with consumers online can generate marketing, trust and sales as found through this research study. This can pave the path to new research on networking for health high tech start-ups.

5.3 Limitations

Although this research study is based on extensive review of literature and existing theories there are some limitations. The limitations of this research are as follows

5.3.1 Limited Application

Since the research is conducted on three high tech health start-ups of Finland, it limits the application of this study's results and findings on a wider level. Therefore, the possibility to formulate an overall analysis regarding the four organizational constructs is also limited.

5.3.2 Language Barriers

The data collected in this research was in English, which is different than the native language of Finland. The interviews were also conducted in English, therefore there is a possibility that some research literature relevant to this study was in Finnish and missed by the researcher due to a language barrier. There could also be a limitation of misinterpretation of the information due to a language barrier.

5.3.3 Potential Biases

Lastly the study was conducted by the researcher individually from the start till end. The collection of data, analysis and justifications thus might present a potential bias, which is inevitable since the study was designed and carried out by a single researcher.

5.4 Future Research Work:

This study contributes to the existing literature on international entrepreneurship, high tech start-ups in health technology and their successful strategies. However, few literature exists in the domain on Finnish health tech start-ups and their internationalisation strategies, therefore this study opens future research in this domain. This research also explores the concept of entrepreneurial orientation as an internal resource to international new ventures. This approach to entrepreneurial orientation can be studied further with research on similar firms to establish empirical results. In regarding to the findings related to networking, cohesive networking with competitors as discussed by (Rancati, 2010) can lay out the fundamentals to explore this concept further.

Secondly, this is a qualitative study and future quantitative research on the same parameters can be conducted to validate the results of this research. This research also provides fundamental theoretical framework for future research in the same health high tech sector or a cross comparison with other high-tech start-ups.

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7 APPENDIX

7.1 Interview Questions

Theme 1: High Tech Startups

- Q. As an entrepreneur, how would you define a startup?
- Q. How do you associate market growth in wearable technologies market? (High rate of market growth vs Low rate of market growth)
- Q. How many employee's does your company have?
- Q. How long did it take your startup to go international?
- Q. During development of your product were you mindful of creating an international market presence?

Theme 2: Entrepreneurial Orientation

- Q: What organizational strategies did you use to internationalize your startup?
- Q: Would you consider your startup's marketing strategy as proactive? If yes, how?
- Q. What is your strategic approach towards dealing with competitors?
- Rate your startup on the following:
 1. Risk Taking
 2. Pro-activeness
 3. Innovativeness

- Q. What is your strategic approach in developing customer loyalty?
- Q. In your opinion, can developing customer links lead to better opportunity recognition in international markets?

Theme 3: Networking and Culture

- Q: In your opinion has culture and networking played a role in your internationalization efforts?
- Q: What is your startup's strategic approach towards networking for international opportunity recognition?
- Q: In your opinion, in international entrepreneurship what is more important social networking or business networking?
- Q: Has there been an instance where your intuition/past experience has guided your decision as an entrepreneur?
- Q: What is your strategic approach towards dealing with cultural differences in global markets?
- Q: When developing a strategy how far ahead do you plan?(years)